



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

### Usage guidelines

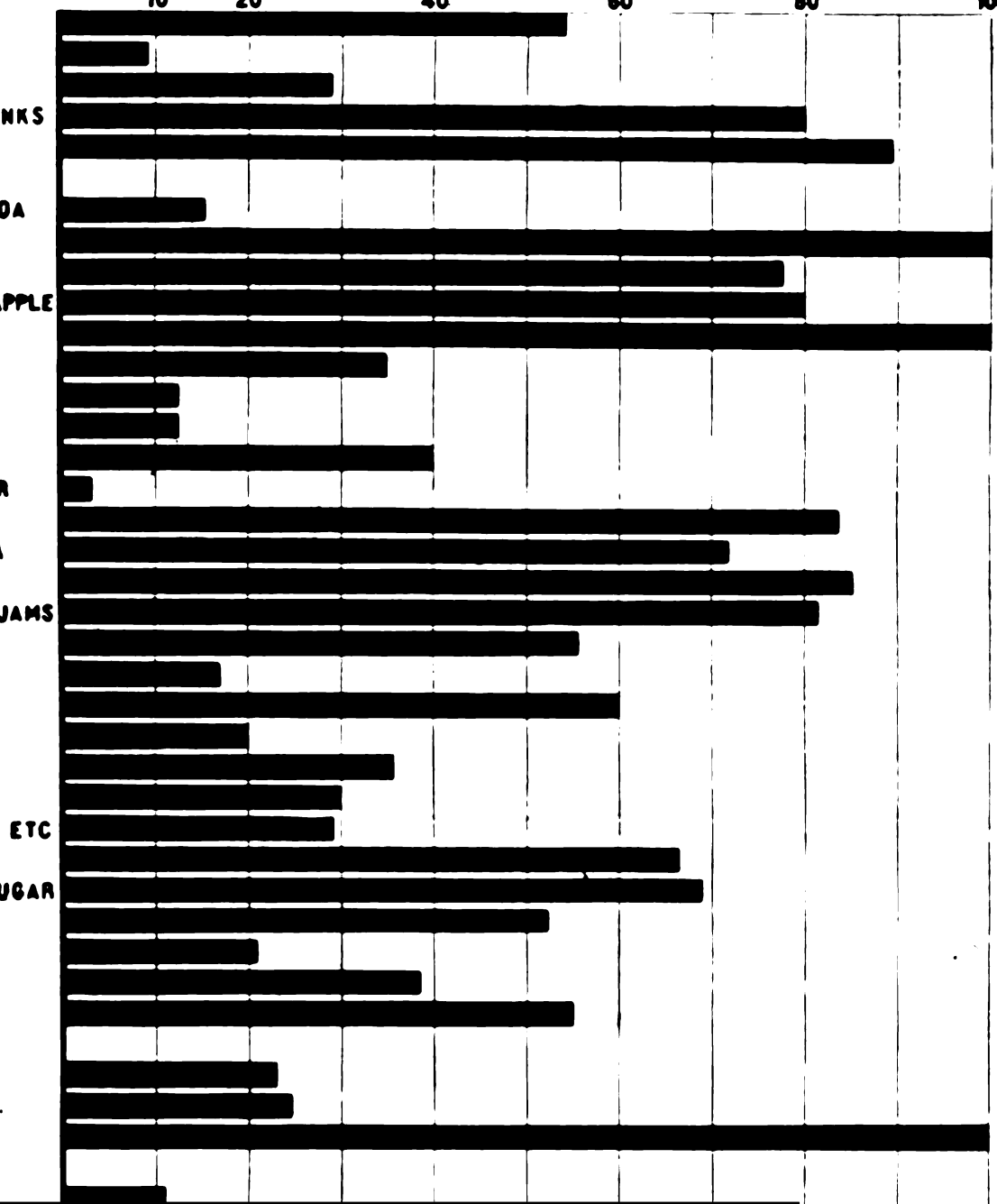
Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

### About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>



*Annual report of the Indiana  
State Board of Health. 1906*

**LANE**

**MEDICAL**



**LIBRARY**

Exchange

Library of Harvard Medical  
School

5

DUPLICATE







5

DUPLICATE



**TWENTY-FIFTH  
ANNUAL REPORT**

**OF THE**

**State Board of Health  
of Indiana**

**FOR THE**

**Fiscal Year Ending October 31, 1906.  
Statistical Year Ending December 31, 1906.**

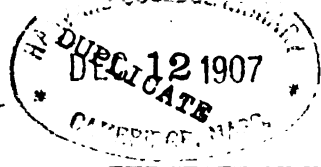
**TO THE GOVERNOR.**

**LARGE LIBRARY**

**INDIANAPOLIS:  
WM. B. BURFORD, CONTRACTOR FOR STATE PRINTING AND BINDING.  
1907.**

V. 4341

Sci 3644.2



THE STATE OF INDIANA,  
EXECUTIVE DEPARTMENT,  
November 20, 1906. }

Received by the Governor, examined and referred to the Auditor of State for verification of the financial statement.

OFFICE OF AUDITOR OF STATE,  
INDIANAPOLIS, November 28, 1906. }

The within report, so far as the same relates to moneys drawn from the State Treasury, has been examined and found correct.

J. C. BILLHEIMER,  
*Auditor of State.*

November 28, 1906.

Returned by the Auditor of State, with above certificate, and transmitted to Secretary of State for publication, upon the order of the Board of Commissioners of Public Printing and Binding.

FRED L. GEMMER,  
*Secretary to the Governor.*

Filed in the office of the Secretary of State of the State of Indiana, November 28, 1906.

FRED A. SIMS,  
*Secretary of State.*

Received the within report and delivered to the printer November 28, 1906.

HARRY SLOUGH,  
*Clerk Printing Bureau.*

I 61  
B1  
1906

## MEMBERS OF THE BOARD.

---

T. HENRY DAVIS, M. D., President ..... Richmond.  
GEO. T. MCCOY, M. D., Vice-President ..... Columbus.  
W. N. WISHARD, M. D ..... Indianapolis.  
F. A. TUCKER, M. D ..... Noblesville.  
J. N. HURTY, M. D., Phar. D., Secretary ..... Indianapolis.

98066



**TWENTY-FIFTH ANNUAL REPORT**  
**OF THE**  
**INDIANA STATE BOARD OF HEALTH.**

---

HON. J. FRANK HANLY, *Governor of Indiana*:

The State Board of Health presents herewith its twenty-fifth annual report.

There is reported herein the transactions and work of the Board, an account of expenditures for the year ending October 31, 1906, and a report of the work of the State Laboratory of Hygiene, which is a department of the Board. The report also contains the vital statistics for the calendar year.

**TRANSACTIONS AND WORK OF THE BOARD.**

The State Board of Health now exists and acts under the health law passed in 1891. There are five members, four being appointed by an appointing board composed of the Governor, the Secretary of State, and the Auditor. These four members appoint a secretary, who thereupon becomes a member of the Board. All members serve for four years.

Quarterly meetings shall be held, and the Board may hold as many special meetings as may seem to it proper. During this year four regular and four special meetings were held, the minutes of which fully set forth the work done.

The quarterly reports of the secretary presented at the regular quarterly meetings give specific accounts of his office and field work. It will be noted that visits are made from time to time by the secretary to different parts of the State. The reasons for making the same, and the results accomplished, are given in detail in his reports. It is believed that these visits are of benefit to the health cause, for the people so assert in letters and com-



munications to the press, and medical and local societies, and teachers' and farmers' institutes which have been addressed, have always passed resolutions of thanks for the advice given and services rendered. A further reason for believing that visits made by the secretary are profitable and of advantage to the people lies in the fact that one hundred and sixty-seven requests were received from various parts of the State for inspection of sanitary conditions and advice concerning the same. The requests came from the governing authorities of counties, cities and towns, from school authorities and private citizens.

#### VITAL STATISTICS.

The vital statistics are collected for the calendar year. They, therefore, can not be presented until after December 31. After all reports are received it will require about ninety days to arrange, tabulate and analyze the data. The mortality statistics are accurate, but the birth and disease statistics are inaccurate. This condition is explained and a remedy recommended in another place in this report. Original certificates of death are received at this office, and carefully arranged and indexed, and citizens may consult the same and secure transcripts without fee. There is an average of 17 applications per week for transcripts of death records. The sanitary usefulness of death records is applied immediately upon receipt of the same.

#### EPIDEMICS.

No widespread epidemics are recorded, but, of course, there were a number of local epidemics. The same are specifically set forth in the special report on vital statistics.

Smallpox existed every month in the year, but it has been in mild form and only occasionally fatal. Prompt quarantine and general vaccination in the localities where it appeared has always succeeded in extinguishing it. The State Board has again and again informed the people that vaccination is the only safe and practical prophylaxis for smallpox.

The deaths from diphtheria have decreased in the last six years as follows: 1900, deaths 746; 1901, 554; 1902, 424; 1903, 462; 1904, 314; 1905, 366. This decrease we attribute almost entirely to the now general use of diphtheria antitoxin. It took some

time to overcome ignorant opposition and the prejudice against the remedy, but now the people generally understand the situation, and by demanding its use the good results are secured. It is now the widespread opinion in the medical world that antitoxin is a specific against diphtheria if administered before the disease is far advanced, and that the only reason why diphtheria deaths are recorded is because many cases are not treated until the attack has continued for several days. The prophylactic use of antitoxin is not practiced to the degree it should be. If it were used in all outbreaks for immunizing, the number of cases would be greatly diminished.

There were fewer scarlet fever deaths and fewer cases and outbreaks for the year ending November 1, than in the same period for any year since 1900. Typhoid fever also shows a decrease by the same comparison. The statistical report to be made up after December 31, when all data will be at hand, will give full details of diseases, epidemics and deaths.

#### STATE LABORATORY OF HYGIENE.

Especial attention is invited to the report of work done in the State Laboratory of Hygiene. There are two divisions to the laboratory—the chemical division and the bacteriological and pathological division. The last is devoted entirely to disease prevention work and the first to hygienic water analyses and to food and drug analyses. We feel sure that the work of the laboratory proves fully its usefulness; indeed it is a true economy on account of its disease and adulteration prevention work. The bacteriological and pathological division has been termed "*the life-saving station*," and the chemical division "*the money-saving station*."

#### RECOMMENDATIONS.

In accordance with the law, which makes it the duty of the State Board of Health to make such recommendations as to health statutes as may seem proper, we recommend as follows:

#### A REGISTRATION LAW.

The registration law passed in 1899, and under which the mortality statistics have been so correctly collected, was declared unconstitutional by the Supreme Court in February, 1904. This

law was an amendment to the health law of 1891, and it was discovered that the title of the amended law was incorrectly quoted in the new act, one line being omitted. This was the sole point upon which the decision was based. As the law of 1891, which now became operative, contained some provisions for registering deaths, births and contagious diseases, the Board decided to continue the system which prevailed under the new law, and to this date mortality statistics have been collected through the momentum acquired from the law of 1899.

The necessity of an efficient registration law plainly exists, and the authority and power conferred upon the State Board of Health for its enforcement should be sufficient in every way.

#### SANITARY SCHOOLHOUSES AND TEACHING HYGIENE IN THE PUBLIC SCHOOLS.

We suggest a statute requiring that all schoolhouses hereafter built shall conform to natural sanitary laws; also that the act should contain a clause requiring that hygiene be taught in the public schools. Not less than 10 per cent. of school moneys are now wasted on account of unsanitary schoolhouses, in which start most of our epidemics, and in which are laid the foundations in many for consumption and other diseases in after life. Massachusetts, Michigan and other States have statutes of the character we propose, and better health and progress among the school children has thus been secured.

#### A STATE HOSPITAL FOR INDIGENT CONSUMPTIVES.

Massachusetts, New York, Rhode Island and others have provided State hospitals for consumptives, and Maryland, Pennsylvania, Michigan and other States are considering the matter. Both humanity and economy demand such institutions in every State. At present fully 1,000 poverty-stricken consumptives are being cared for at public expense or by private charity in Indiana, but in such manner as to spread the disease and not restore to health a single patient. The proposition to establish a State Hospital for indigent consumptives is not one to unnecessarily spend money, but is a measure to more wisely expend the money now devoted to caring for these unfortunates,

We believe all of these recommendations are wise, and would, if put in force by the State, save money to the people and materially promote the public happiness.

#### POLLUTION OF STREAMS, WATER SUPPLIES AND SEWERS.

Indiana is an inland State, and is fortunately supplied with numerous streams and lakes, and except in the central and southern portion there is yet abundance of ground water. It is apparent that our streams and lakes are valuable assets, and should be jealously protected from pollution or other destruction. They are sources of beauty and refreshment to the land, sources of a valuable food supply, and must eventually furnish public water supplies. It is this last fact which makes it urgent that early action be taken for their preservation.

The experience of the Indianapolis and of the Muncie Water companies demonstrates that the ground water is limited, is growing less and less, and is inadequate for the public supply. For a few years both of the cities named had an abundant pure supply, but gradually the quantity diminished and new wells were bored. This did not relieve the situation, for the new wells penetrated the same water bearing stratum as the old ones, and no increase in quantity was secured.

The Muncie Water Company relieved the situation for a time by making up the deficiency with filtered water from White River, but lately the oil wells above Muncie so badly polluted the river with kerosene products that it was impossible to filter the water. This drove the Muncie Company to dam a small creek and establish a water shed. It is certain, however, if stream pollution is permitted to continue, that this supply for Muncie can not be depended upon.

The Indianapolis Water Company has been compelled to put in extensive filter beds, costing five or six hundred thousand dollars, to filter the water from White River. This filtered water is at present mixed with deep well water (the amount of the latter diminishing daily), and this constitutes the Indianapolis supply. The lesson is—Indianapolis must very soon depend entirely upon the river, and if the gross pollution which now exists is permitted to continue, filtration will become more and more difficult and expensive, and Indianapolis, and also other cities on the shores

of White River, will be sorely injured, possibly to a degree to stop their growth. What has occurred along White River will in time occur in all parts of the State, and now seems to be the time to apply the remedy. We propose a law similar to that of Massachusetts, where these same problems arose some years ago, and which the said law has satisfactorily solved. This law should make it unlawful to deposit sewage, factory wastes, or any polluting matter into streams or lakes, and it should provide that within a certain time that all cities and towns shall dispose of their sewage by well proven methods known to sanitary science; and that all factories shall, within twelve months from the going into effect of the law, dispose of their wastes in a sanitary way. All of this has been repeatedly accomplished in other States.

As cities and towns are continually making expensive mistakes in the matter of establishing public water supplies and in building sewers and drains, it seems wise to adopt the successful method pursued in Ohio, Massachusetts, Pennsylvania, and other States, to prevent such mistakes, with their consequent money loss and sanitary failure. This method is to require by statutes that all plans and specifications for public water supplies, and for sewers and drains, shall be submitted for the approval of the State Board of Health before the same may be constructed.

For the State Board of Health to properly execute a law of this kind, controlling stream pollution, the water supplies and sewer construction, a sanitary engineering department would be required, and therefore said law would necessarily create such department. There should be a competent sanitary engineer appointed by the State Board, and a proper appropriation given for the enforcement of the act.

We believe a wise law of this character is absolutely necessary for the promotion of the welfare of the State, and would be an economic measure, and for these reasons we propose the same. We further believe that the protection of the lakes and streams from pollution-destruction, is a subject which will not down, and the question about the matter is, Shall the State attend to it now, or do so after disease, death and pecuniary loss compel action?

## THE PURE FOOD AND DRUG LAW.

We call your special attention to the report of the chemical division upon the work done in the enforcement of the pure food and drug law. We think this report will plainly show the value of the department, and it will also show the lameness of the present law as discovered by trials in the courts. Under the present law it must be proven that the vendor of adulterated foods and drugs *knowingly* sold or had in his possession to sell, and in the case of preservatives, it must every time be proven that the special preservative used is injurious to health. Until these faults are removed, we can not hope to promptly and adequately punish offenders. We therefore recommend the repeal of all laws and parts of laws pertaining to food and drug adulteration, and the enactment of a statute embodying the main principles and features of the national pure food and drug law.

The water work of the chemical laboratory appears to be of special value. One hundred and forty-six public water supplies have been examined, of which 74 were good, 43 bad, and 29 of doubtful character. Five hundred and forty-two private supplies were analyzed, including deep driven and bored wells, and shallow driven and dug wells. Of these, 236 were good, 54 were suspicious, and 202 were bad. These results are indicative of the character of the public and private water supplies of the State, and show the necessity for their careful supervision.

We hope that full consideration of these recommendations will secure your support, and that the same will be recommended in your message to the Legislature.

Approved by the Board, November 16, 1906, and ordered to be submitted to the Governor.

T. HENRY DAVIS, President.

GEO. T. McCOY, Vice-President.

F. A. TUCKER.

J. N. HURTY, Secretary.

## DEPARTMENT OF HEALTH.

## FINANCIAL STATEMENT.

## RECEIPTS.

By appropriation .....\$10,000 00

## DISBURSEMENTS.

## 1905.

Nov. 30.	May Stuart, salary.....	\$50 00
" 30.	Maude Linn, salary.....	50 00
" 30.	Florence Froschauer, salary.....	50 00
" 30.	Alice Christian, salary.....	50 00
" 30.	Ethel Hoffman, salary.....	50 00
" 30.	Dr. Helene Knabe, expense.....	9 35
Dec. 15.	Dr. T. Henry Davis, Health Officers' conference.....	26 20
" 15.	Dr. C. M. Eisenbeiss, Health Officers' conference.....	35 25
" 15.	Dr. F. A. Tucker, Health Officers' conference.....	25 95
" 15.	Dr. W. T. S. Dodds, Health Officers' conference.....	10 00
" 15.	Prof. Severance Burrage, Health Officers' conference.....	10 00
" 15.	Dr. Helene Knabe, sanitary work.....	4 70
" 31.	May Stuart, salary.....	50 00
" 31.	Maude Linn, salary.....	50 00
" 31.	Alice Christian, salary.....	50 00
" 31.	Florence Froschauer, salary.....	50 00
" 31.	Ethel Hoffman, salary.....	50 00

## 1906.

Jan. 4.	Henry W. Bennett, P. M.....	100 00
" 12.	Indianapolis Telephone Company.....	27 55
" 12.	Wm. B. Burford.....	97 43
" 12.	Dr. J. N. Hurty, expense.....	114 92
" 12.	Dr. Chas. E. Ferguson, services.....	27 00
" 12.	Adams Express Co., services.....	5 95
" 12.	American Express Co., services.....	7 60
" 12.	U. S. Express Co., services.....	5 65
" 12.	Western Union Tel. Co., tolls.....	3 02
" 12.	J. L. Anderson, expense drayage.....	1 90
" 12.	Crossett & Bates, "Pediatrics".....	2 00
" 12.	Leo Lando, merchandise.....	3 50
" 12.	Geo. J. Mayer, rubber stamp.....	80
" 12.	American Public Health Association, dues.....	5 00
" 12.	Parke, Davis & Co., merchandise.....	5 50
" 12.	American Toilet Supply Co.....	3 75
" 12.	Wm. H. Armstrong & Co., merchandise.....	9 25
" 12.	Dr. T. Henry Davis, President.....	14 05
" 12.	Dr. Wm. N. Wishard.....	10 00

Jan. 12.	Dr. F. A. Tucker.....	\$11 45
" 31.	May Stuart, salary.....	50 00
" 31.	Maude Linn, salary.....	50 00
" 31.	Alice Christian, salary.....	50 00
" 31.	Florence Froschauer, salary.....	50 00
" 31.	Ethel Hoffman, salary.....	50 00
Feb. 2.	Henry W. Bennett, P. M., stamps.....	100 00
" 28.	May Stuart, salary.....	50 00
" 28.	Maude Linn, salary.....	50 00
" 28.	Alice Christian, salary.....	50 00
" 28.	Florence Froschauer, salary.....	50 00
" 28.	Ethel Hoffman, salary.....	50 00
" 28.	Nellie Prendergast, salary.....	44 00
Mar. 6.	R. E. McCormack, labor.....	9 75
" 6.	F. E. McCormack, labor.....	6 00
" 6.	J. L. Anderson, expense and drayage.....	6 83
" 7.	Dr. T. Henry Davis.....	15 20
" 7.	Dr. Wm. N. Wishard.....	10 00
" 7.	Dr. F. A. Tucker.....	11 70
" 7.	Dr. Geo. T. McCoy.....	12 25
" 16.	Henry W. Bennett, P. M., stamps.....	100 00
" 31.	May Stuart, salary.....	50 00
" 31.	Maude Linn, salary.....	50 00
" 31.	Alice Christian, salary.....	50 00
" 31.	Florence Froschauer, salary.....	50 00
" 31.	Ethel Hoffman, salary.....	50 00
" 31.	Nellie Prendergast, salary.....	40 00
Apr. 13.	Wm. B. Burford, printing and stationery.....	474 54
" 13.	Neostyle Co.....	20 00
" 13.	Indianapolis Tel. Co., rent and services.....	29 15
" 13.	J. A. Downey, Postal Guide, 1906.....	2 50
" 13.	Postal Tel. Cable Co., service.....	29
" 13.	Western Union Telegraph Co., service.....	6 14
" 13.	American Toilet Supply Co., laundry.....	3 75
" 13.	American Express Co.....	11 50
" 13.	Adams Express Co.....	3 06
" 13.	U. S. Express Co.....	9 21
" 13.	Bobb-Merrill, books and merchandise.....	7 78
" 13.	British Food Journal, subscriptions, 1906.....	1 95
" 13.	W. H. Bass, lantern slides.....	15 00
" 13.	Pettis Dry Goods Co.....	3 88
" 13.	Dr. J. N. Hurty, expense.....	38 69
" 13.	Geo. J. Mayer, letter outfit.....	5 00
" 13.	Dr. T. Henry Davis.....	14 65
" 13.	Dr. Geo. T. McCoy.....	12 00
" 13.	Dr. F. A. Tucker.....	11 45
" 13.	Dr. Wm. N. Wishard.....	10 00
" 30.	Dr. Helene Knabe, expense.....	15 34
" 30.	May Stuart, salary.....	50 00
" 30.	Maude Linn, salary.....	50 00



Apr. 30.	Alice Christian, salary.....	\$50 00
" 30.	Florence Froschauer, salary.....	50 00
" 30.	Ethel Hoffman, salary.....	50 00
" 30.	Nellie Prendergast, salary.....	40 00
May 3.	H. W. Bennett, P. M., stamps.....	100 00
" 18.	Dr. Wm. N. Wishard.....	10 00
" 18.	Dr. T. Henry Davis.....	14 25
" 18.	Dr. F. A. Tucker.....	10 70
" 31.	May Stuart, salary.....	50 00
" 31.	Maude Linn, salary.....	50 00
" 31.	Florence Froschauer, salary.....	50 00
" 31.	Alice Christian, salary.....	50 00
" 31.	Ethel Hoffman, salary.....	50 00
" 31.	Nellie Prendergast, salary.....	40 00
" 31.	Lillian R. Chandlee, salary.....	31 67
June 22.	H. W. Bennett, P. M., stamps.....	100 00
" 27.	Dr. A. W. Brayton, services.....	5 00
" 29.	Dr. A. W. Bitting, services.....	12 50
" 29.	Dr. J. McLean Moulder, services.....	10 00
" 29.	Dr. J. N. Taylor, services.....	10 00
" 29.	Dr. F. A. Tucker.....	20 70
" 29.	Dr. Geo. T. McCoy.....	66 45
" 29.	Dr. T. Henry Davis.....	23 70
" 30.	May Stuart, salary.....	50 00
" 30.	Maude Linn, salary.....	50 00
" 30.	Florence Froschauer, salary.....	50 00
" 30.	Alice Christian, salary.....	50 00
" 30.	Ethel Hoffman, salary.....	50 00
" 30.	Lillian R. Chandlee, salary.....	50 00
July 13.	-Adams Express Co., services.....	77
" 13.	American Express Co.....	4 30
" 13.	U. S. Express Co.....	3 35
" 13.	American Toilet Supply Co., laundry.....	3 75
" 13.	American Medical Association, dues, 1906.....	5 00
" 13.	Bobbs-Merrill Co., merchandise.....	1 86
" 13.	H. M. Brinker, books.....	3 75
" 13.	Charity Organization, books.....	4 50
" 13.	Indianapolis Calcium Light Co., lantern exhibit.....	5 50
" 13.	Dr. J. G. Nehrbas, express.....	2 80
" 13.	Western Union Tel. Co., messages.....	3 19
" 13.	Indianapolis Blue Print Co., merchandise.....	13 15
" 13.	Frances Pharmacy Co., merchandise.....	4 50
" 13.	The Schofield Plerson Co., book.....	3 00
" 13.	Chas. Mayer & Co., merchandise.....	65
" 13.	S. D. Kiger & Co., merchandise.....	1 00
" 13.	J. L. Anderson, expense.....	5 72
" 13.	J. N. Hurty, Secretary, expense.....	49 19
" 13.	Wm. B. Burford, printing, stationery, etc.....	829 98
" 13.	Dr. T. Henry Davis, Board meeting.....	14 40
" 13.	Dr. Geo. T. McCoy, Board meeting.....	12 25

July 13.	Dr. Wm. N. Wishard, Board meeting.....	\$20 00
" 13.	Dr. F. A. Tucker, expense.....	69 15
" 13.	Dr. F. A. Tucker, Board meeting.....	14 20
" 13.	Indianapolis Telephone Co., rent and tolls.....	30 70
" 30.	H. M. Bennett, P. M., stamps.....	100 00
" 31.	May Stuart, salary.....	50 00
" 31.	Maude Linn, salary.....	50 00
" 31.	Alice Christian, salary.....	50 00
" 31.	Florence Froschauer, salary.....	50 00
" 31.	Ethel Hoffman, salary.....	50 00
" 31.	Lillian R. Chandlee, salary.....	50 00
Aug. 23.	H. W. Bennett, P. M., stamps.....	150 00
" 31.	May Stuart, salary.....	50 00
" 31.	Maude Linn, salary.....	50 00
" 31.	Alice Christian, salary.....	50 00
" 30.	Florence Froschauer, salary.....	50 00
" 31.	Florence Froschauer, salary.....	50 00
" 31.	Ethel Hoffman, salary.....	50 00
" 31.	Lillian R. Chandlee, salary.....	50 00
Sept. 15.	H. W. Bennett, P. M., stamps.....	200 00
" 30.	May Stuart, salary.....	50 00
" 30.	Maude Linn, salary.....	50 00
" 31.	Alice Christian, salary.....	50 00
" 30.	Florence Froschauer, salary.....	50 00
" 30.	Ethel Hoffman, salary.....	50 00
" 30.	Lillian R. Chandlee, salary.....	50 00
Oct. 12.	Dr. T. Henry Davis.....	14 40
" 12.	Dr. Geo. T. McCoy.....	12 25
" 12.	Dr. Wm. N. Wishard.....	10 00
" 12.	Dr. F. A. Tucker.....	10 80
" 12.	Merrick Fox Typewriter Co.....	125 00
" 12.	Indianapolis Telephone Co.....	29 55
" 12.	Wm. B. Burford.....	594 27
" 12.	Pettis Dry Goods Co.....	72 86
" 12.	Addressograph Co.....	139 13
" 12.	Prof. R. L. Sackett.....	300 00
" 12.	W. H. Bass Photo Co.....	16 20
" 12.	G. E. Steckert & Co.....	48 90
" 12.	Dr. J. N. Hurty.....	219 88
" 12.	Schotfield Pierson Co.....	6 25
" 12.	Smith-Premier Typewriter Co.....	8 50
" 12.	Western Union Telegraph Co.....	6 50
" 12.	J. L. Anderson.....	4 55
" 12.	American Express Co.....	9 70
" 12.	Adams Express Co.....	1 25
" 12.	U. S. Express Co.....	2 52
" 12.	American Toilet Supply Co.....	5 00
" 12.	Parke, Davis & Co.....	1 15
" 12.	F. A. Hardy & Co.....	5 75
" 12.	Open Air Quarterly.....	8 00

Oct. 12.	Dues National Tuberculosis Association.....	\$5 00
" 12.	Indianapolis Calcium Light Co.....	10 00
" 12.	Lederle Antitoxin Laboratories.....	41 25
" 27.	Dr. A. W. Brayton.....	25 00
" 27.	Parke, Davis & Co., merchandise.....	28 25
" 27.	J. L. Anderson, postage stamps.....	200 00
" 29.	Dr. J. N. Hurty, expense.....	22 97
" 29.	Dr. Geo. T. McCoy, expense.....	24 08
" 29.	Dr. Wm. N. Wishard, expense.....	18 10
" 29.	Dr. F. A. Tucker, expense.....	26 65
" 29.	Bobbs-Merrill Co., directory.....	2 10
" 29.	Leo Lando, hygrometer.....	3 00
" 29.	United Press News Association, clippings.....	12 50
" 29.	G. E. Stechert & Co., text books.....	11 82
" 29.	J. L. Anderson, expense.....	2 04
" 29.	American Express Co.....	4 88
" 29.	Smith-Premier Typewriter Co., repairs.....	7 00
" 29.	Dr. J. W. Strange, express.....	80
" 29.	Addressograph Co., addresses.....	33
" 29.	New Telephone Co., tolls.....	20
" 29.	Wm. B. Burford, printing, stationery, etc.....	716 82
" 29.	Western Union Telegraph Co., services.....	1 49
" 31.	I. L. Miller, services.....	67 50
" 31.	May Stuart, salary.....	50 00
" 31.	Maude Linn, salary.....	50 00
" 31.	Alice Christian, salary.....	50 00
" 31.	Florence Froschauer, salary.....	50 00
" 31.	Ethel Hoffman, salary.....	50 00
" 31.	Lillian R. Chandlee, salary.....	50 00
" 31.	Balance reverted to General Fund.....	187 21
Total .....		\$10,000 00

## STATE LABORATORY OF HYGIENE.

### LABORATORIES.

#### EQUIPMENT FUND.

Balance from 1905..... \$619 70

#### DISBURSEMENT.

Capitol Furniture & Cabinet Co., furniture..... \$600 00  
 Central Supply Co., merchandise..... 10 00

Total ..... \$610 00  
 Balance ..... 9 70

Total ..... \$619 70

## MAINTENANCE FUND.

1905.		
Nov. 30.	Prof. H. E. Barnard, salary and expense.....	\$188 79
" 30.	H. E. Bishop, salary.....	60 00
" 30.	L. W. Bristol, salary.....	60 00
" 30.	Nellie M. Coney, salary.....	50 00
" 30.	Dr. Helene Knabe, salary.....	60 00
" 30.	Philip Brodus, salary.....	40 00
Dec. 19.	Aquos Distilled Water Co., water.....	3 60
" 19.	Hogan Transfer Co.....	8 01
" 19.	E. J. Rust, electric wiring.....	15 00
" 31.	Prof. H. E. Barnard, salary.....	125 00
" 31.	Prof. H. E. Barnard, expense.....	13 60
" 31.	H. E. Bishop, salary.....	60 00
" 31.	Mrs. Nellie M. Coney, salary.....	50 00
" 31.	Dr. Helene Knabe, salary.....	60 00
" 31.	Louis W. Bristol, salary.....	60 00
" 31.	Philip Brodus, salary.....	40 00
1906.		
Jan. 12.	Oliver Typewriter Agency.....	125 00
" 12.	E. H. Sargent & Co., haemometer.....	35 00
" 12.	Sanborn-Marsh Electric Co., merchandise.....	7 44
" 12.	Vonnegut Hardware Co., merchandise.....	7 64
Dec. 12.	H. E. Zimmer, rubber tubing.....	3 72
" 12.	Joseph Gardner, copper ovens.....	6 56
" 12.	American Tillet Supply Co.....	14 05
" 12.	Daniel Stewart Co., drugs.....	10 40
" 12.	Aquos Distilled Water Co., water.....	1 20
" 12.	L. S. Ayres & Co., cloth.....	2 00
" 12.	Hogan Transfer Co., freight and drayage.....	2 43
Jan. 12.	Central Union Tel. Co.....	35
" 12.	Wm. Langsenkamp, merchandise.....	20 75
" 12.	Lilly & Stalnaker, merchandise.....	2 15
" 12.	Schrader China Co., jars.....	2 20
" 12.	L. E. Morrison & Co., rubber apron.....	75
" 12.	Bausch & Lomb Optical Co., merchandise.....	265 78
" 11.	Elmer & Amend, chemicals and apparatus.....	128 11
" 31.	Dr. T. V. Keene, salary.....	150 00
" 31.	Dr. Helene Knake, salary.....	60 00
" 31.	Effie Stephens, salary.....	50 00
" 31.	Prof. H. E. Barnard, salary.....	125 00
" 31.	Prof. H. E. Barnard, expense.....	9 75
" 31.	H. E. Bishop, salary.....	60 00
" 31.	Nellie M. Coney, salary.....	50 00
" 31.	Norris Thompson, salary.....	15 00
" 31.	Philip Brodus, salary and balance due for November and December.....	51 39
Feb. 17.	Sandborn-Marsh Electric Co.....	23 00
" 17.	Capital Furniture & Cabinet Co.....	22 90
" 20.	Freaney Bros., plumbing.....	209 34
Jan. 1.	Balke & Krause Co., lumber.....	5 76

Jan.	12.	Oliver Typewriter Agency, ribbon.....	\$0 75
"	15.	Indianapolis Blue Print Co.....	1 95
"	17.	Geo. J. Mayer, rubber stamps.....	1 05
"	17.	Wm. Langsenkamp, repairs.....	1 00
"	17.	Daniel Stewart Co., drugs.....	8 87
"	20.	The H. Lieber Co., frames.....	2 00
"	22.	Vonnegut Hardware Co., merchandise.....	6 10
"	23.	E. H. Eldridge Lumber Co.....	3 50
"	23.	Schrader China Co., jars.....	90
"	29.	Hogan Transfer Co.....	2 00
"	30.	Pettis Dry Goods Co., cotton.....	1 10
Feb.	1.	Royse Electric Co., merchandise.....	88
"	1.	Shortridge High School, gas hood.....	5 00
"	14.	Torsion Balance Co., merchandise.....	1 25
"	17.	Dr. T. Victor Keene, express.....	95
"	18.	Dr. T. Victor Keene, expense.....	3 88
"	21.	Columbia School Supply Co., weights.....	3 25
"	22.	Bliss-Swain Co., two coats.....	3 00
"	23.	H. E. Barnard, expense.....	23 04
"	23.	R. W. G. Owen, widal test.....	1 00
"	28.	Dr. T. V. Keene, salary.....	150 00
"	28.	Dr. Helene Knabe, salary.....	60 00
"	28.	Effie Stephens, salary.....	50 00
"	28.	Prof. H. E. Barnard, salary.....	125 00
"	28.	H. E. Bishop, salary.....	60 00
"	28.	Nellie M. Coney, salary.....	50 00
"	28.	Norris Thompson, salary.....	35 00
"	28.	Philip Brodus, salary.....	40 00
Mar.	13.	Bausch & Lomb Optical Co., merchandise.....	2 95
"	13.	Bausch & Lomb Optical Co., merchandise.....	252 40
"	31.	Dr. T. V. Keene, salary.....	150 00
"	31.	Dr. H. Knabe, salary.....	60 00
"	31.	Effie Stephens, salary.....	50 00
"	31.	Prof. H. E. Barnard, salary.....	125 00
"	31.	H. E. Bishop, salary.....	60 00
"	31.	Nellie M. Coney, salary.....	50 00
"	31.	N. Thompson, salary.....	35 00
"	31.	Philip Brodus, salary.....	44 28
Apr.	5.	American Can Co., merchandise and freight.....	52 47
"	5.	Eberhard Faber, merchandise.....	15 55
"	7.	E. H. Sargent & Co., merchandise.....	53 48
"	7.	E. H. Sargent & Co., merchandise.....	63 20
"	10.	Arthur H. Thomas Co., merchandise.....	174 71
"	16.	Frank Bird Transfer Co., drayage.....	1 00
"	16.	American Toilet Supply Co., laundry.....	18 55
"	16.	Aquos Distilled Water Co., water.....	7 40
"	16.	Badger Furniture Co., desk stools.....	6 00
"	16.	Lilly & Stalnaker, merchandise.....	5 65
"	16.	Joseph Gardner, test tube racks.....	2 00
"	16.	H. E. Zimmer, soap.....	44
"	16.	Daniel Stewart Co., drugs and merchandise.....	7 07

Apr. 16.	Hogan Transfer Co.....	\$2 00
" 16.	Wm. B. Burford, printing and stationery.....	16 65
" 16.	The H. Lieber Co., framing.....	8 05
" 16.	Vonnegut Hardware Co., merchandise.....	2 58
" 16.	Ed. Z. Franks, automatic water still.....	14 00
" 16.	A. Daigger, laboratory supplies.....	142 13
" 16.	Prof. H. E. Barnard, traveling expense and merchandise .....	18 64
" 30.	Prof. H. E. Barnard, salary.....	125 00
" 30.	H. E. Bishop, salary.....	60 00
" 30.	Nellie M. Coney, salary.....	50 00
" 30.	N. Thompson, salary.....	35 00
" 30.	Philip Brodus, salary.....	42 86
" 30.	Dr. T. V. Keene, salary.....	150 00
" 30.	Helene Knabe, M. D., salary.....	60 00
" 30.	Effie Stephens, salary.....	50 00
May 29.	Postage stamps.....	50 00
" 31.	Dr. T. V. Keene, salary.....	150 00
" 31.	Dr. H. Knabe, salary.....	60 00
" 31.	Effie Stephens, salary.....	50 00
" 31.	Prof. H. E. Barnard, salary.....	125 00
" 31.	H. E. Bishop, salary.....	60 00
" 31.	Nellie M. Coney, salary.....	20 00
" 31.	N. Thompson, salary.....	35 00
" 31.	Philip Brodus, salary.....	44 29
June 29.	Prof. H. E. Barnard, expense.....	24 13
" 29.	Dr. T. V. Keene, expense.....	17 76
" 30.	Dr. T. V. Keene, salary.....	150 00
" 30.	Dr. Helene Knabe, salary.....	60 00
" 30.	Effie Stephens, salary.....	50 00
" 30.	Prof. H. E. Barnard, salary.....	125 00
" 30.	H. E. Bishop, salary.....	60 00
" 30.	Nellie Prendergast, salary.....	40 00
" 30.	N. Thompson, salary.....	35 00
" 30.	Philip Brodus, salary.....	42 86
July 20.	Elmer & Amend, merchandise.....	8 00
" 20.	G. E. Stechert & Co., text books.....	23 18
" 13.	Hogan Transfer Co.....	2 39
" 13.	American Toilet Supply Co., laundry.....	16 05
" 13.	Parke, Davis & Co., tubes.....	5 00
" 13.	Joseph Gardner, merchandise and labor.....	56 20
" 13.	Central Supply Co., merchandise.....	1 48
" 13.	Daniel Stewart Drug Co., merchandise.....	9 77
" 13.	H. E. Zimmer, merchandise.....	75
" 13.	Leo Lando, magnifiers.....	4 50
" 13.	Wm. Langsenkamp, repairs.....	3 00
" 13.	Pettis Dry Goods Co., merchandise.....	1 35
" 20.	E. H. Sargent & Co., merchandise.....	24 77
" 13.	The H. Lieber Co., merchandise.....	2 30
" 13.	W. B. Burford, printing, stationery and supplies.....	48 63
" 13.	Vonnegut Hardware Co., merchandise.....	3 45

July 13.	Columbia School Supply Co., hydrometer jars.....	\$5 33
" 23.	Arthur H. Thomas Co., merchandise.....	86 40
" 18.	Ballweg & Co., boxes.....	22 50
Aug. 9.	Prof. H. E. Barnard, expense attending National and State Dairy and Food Association meeting, July 16 to 24, 1906.....	74 10
July 31.	Dr. T. V. Keene, salary.....	150 00
" 31.	Dr. Helene Knabe, salary.....	60 00
" 31.	Dr. Ada Sweitzer, salary .....	16 00
" 31.	Effie Stephens, salary.....	50 00
" 31.	Prof. H. E. Barnard, salary.....	125 00
" 31.	H. E. Bishop, salary.....	60 00
" 31.	Mrs. Nellie M. Coney, salary.....	37 50
" 31.	Norris Thompson, salary.....	35 00
" 31.	Phillip Brodus, salary.....	44 29
Aug. 23.	Dr. D. W. McNamara, samples and services.....	11 83
" 23.	Henry W. Bennett, P. M., postage stamps.....	100 00
" 25.	Chas. L. Bragg, samples, traveling expense, wages...	24 88
" 29.	H. E. Barnard, samples for analysis.....	2 87
" 29.	Norris Thompson, samples for analysis.....	2 40
" 29.	Will D. McAbee, samples and expense.....	18 37
" 29.	Will D. McAbee, wages one week.....	10 00
" 31.	Dr. T. V. Keene, salary.....	150 00
" 31.	Dr. Helene Knabe, salary.....	60 00
" 31.	Dr. Ada Sweitzer, salary.....	30 00
" 31.	Katherine Loechle, salary.....	40 00
" 31.	Prof. H. E. Barnard, salary.....	125 00
" 31.	H. E. Bishop, salary.....	60 00
" 31.	Nellie M. Coney, salary.....	50 00
" 31.	Norris Thompson, salary.....	35 00
" 31.	Phillip Brodus, salary.....	44 29
Sept. 1.	Chas. T. Bragg, expense samples, traveling.....	18 65
" 1.	Chas. T. Bragg, salary one week.....	10 00
" 4.	J. J. Hinman, services in laboratory.....	25 00
" 6.	Chas. T. Bragg, expense samples and traveling.....	6 10
" 6.	Chas. T. Bragg, salary.....	5 00
" 8.	C. E. Canaday, expense samples and services.....	4 20
" 10.	Will D. McAbee, expense samples and traveling.....	32 75
" 10.	Will D. McAbee, salary two weeks.....	20 00
" 11.	Lea Bros. & Co., National Standard dispensary.....	8 00
" 11.	Lea Bros. & Co., National formulary.....	65
" 14.	J. J. Hinman, expense samples and traveling.....	10 54
" 14.	J. J. Hinman, salary.....	5 00
" 18.	Will D. McAbee, expense samples and traveling.....	23 80
" 18.	Will D. McAbee, salary one week.....	10 00
" 29.	R. E. Bishop, expense samples for laboratory.....	23 53
" 30.	Dr. T. V. Keene, salary.....	150 00
" 30.	Dr. Helene Knabe, salary.....	75 00
" 30.	Dr. Ada Sweitzer, salary .....	30 00
" 30.	Katherine Loechle, salary four days.....	5 00
" 30.	Prof. H. E. Barnard, salary.....	125 00

Sept. 30.	H. E. Bishop, salary.....	\$75 00
" 30.	Nellie M. Coney, salary.....	50 00
" 30.	N. Thompson, salary.....	35 00
" 30.	I. L. Miller, salary.....	15 00
" 30.	Phillip Brodus, salary.....	42 90
Oct. 1.	Norris Thompson, expense samples, drugs, etc.....	17 74
" 8.	R. E. Bishop, expense samples for laboratory.....	32 41
" 8.	R. E. Bishop, salary two weeks.....	20 00
" 9.	Norris Thompson, samples for laboratory.....	24 16
" 16.	Bausch & Lomb Optical Co., merchandise.....	132 02
" 12.	American Toilet Supply Co., laundry.....	13 70
" 12.	E. H. Eldridge Lumber Co., lumber and supplies....	15 00
" 12.	Pitman-Myers Co., chemicals and supplies.....	69 62
" 12.	Wm. B. Burford, printing, stationery and supplies...	78 84
" 12.	J. A. Diggle, gas heater connections, etc.....	27 71
" 12.	H. E. Barnard, expenses Aug. 30 to Oct. 10.....	35 79
Sept. 15.	Vonnegut Hardware Co.....	3 70
" 15.	W. F. Williams Mfg. Co.....	75
" 15.	Stephens Photo Supply Co.....	2 25
" 15.	Daniel Stewart Co.....	4 50
" 15.	Public Drug Co.....	70
" 15.	Chas. Coonly & Co.....	60
" 15.	G. A. Senrick & Co.....	75
" 15.	Robert P. Milton.....	80
" 15.	Leo Eliel.....	60
" 15.	Otto C. Bastian.....	80
" 15.	G. E. Cimmerman.....	65
Oct. 1.	Columbia School Supply Co.....	2 60
" 1.	Central Supply Co.....	53
Sept. 15.	Indianapolis Gas Co.....	3 75
" 15.	Berterman Bros. ....	4 00
" 15.	H. E. Zimmer.....	6 80
Oct. 1.	Hogan Transfer Co.....	75
" 1.	American Express Co.....	55
" 1.	The H. Lieber Co.....	3 80
" 1.	Robert Worthington, labor.....	9 00
" 12.	R. E. Bishop, expense samples and salary.....	50 39
" 31.	Bausch & Lomb Optical Co., merchandise.....	23 04
" 31.	H. E. Barnard, expense.....	11 28
" 31.	Dr. T. V. Keene, salary.....	150 00
" 31.	Dr. Helene Knabe, salary.....	75 00
" 31.	Dr. Ada Sweetzer, salary.....	30 00
" 31.	Mrs. Florence M. Carper, salary.....	38 50
" 31.	Katherine Loechle, salary.....	7 70
" 31.	Prof. H. E. Barnard, salary.....	125 00
" 31.	H. E. Bishop, assistant, salary.....	75 00
" 31.	Mrs. Nellie M. Coney, salary.....	50 00
" 31.	Norris Thompson, salary.....	35 00
" 31.	Phillip Brodus, salary.....	44 29

---

Total ..... \$9,994 61



Appropriation .....	\$10,000 00
Disbursement .....	9,994 61
<hr/>	
Balance reverting to General Fund.....	\$5 39

#### RECAPITULATION.

Balance from Equipment Fund. 1905.....	\$619 70
Appropriation General Fund.....	10,000 00
Appropriation Laboratory Maintenance Fund.....	10,000 00
<hr/>	
Total .....	\$20,619 70

#### EXPENDITURES.

Equipment Fund.....	\$610 00
Expense Fund.....	9,812 79
Laboratory Maintenance Fund.....	9,994 61
<hr/>	
Total .....	\$20,417 40
<hr/>	
Balance .....	\$202 30
Reverting to General Fund.....	192 60
<hr/>	
Balance Equipment Fund.....	\$9 70
Secretary's salary.....	\$2,400 00
Chief Clerk's salary.....	1,000 00
<hr/>	
Total .....	\$3,400 00

**Minutes of Transactions**  
**BY**  
**Quarters.**

## FIRST QUARTER.

### SPECIAL MEETING.

December 14, 1905.

Present: Drs. Davis, Eisenbeiss, Tucker and Hurty.

Meeting called to order by the President at 12 m. The work of the Health Officers' School for Town Officers was reviewed and approved.

Adjourned to meet at 2 p. m., Friday, December 15.

### ADJOURNED MEETING.

December 15, 1905.

Called to order by President Davis.

Present: Drs. Davis, Eisenbeiss, Tucker and Hurty.

The two days' meeting of the Health Officers' School were reviewed, and the proceedings ordered written out.

The following resolution after the discussion was adopted:

#### RESOLUTION CONCERNING THE NATIONAL PURE FOOD LAW.

Whereas, Food and drug adulteration has become a very great evil, causing enormous injury to the health and life of the people, and also causing them great monetary loss; and

Whereas, It is certainly true that the State food and drug laws do not furnish practical protection on account of their varying standards and requirements; therefore it is

Resolved, That the Indiana State Board of Health, which is charged with the enforcement of the Indiana pure food and drug law, most respectfully requests the Senators and Congressmen from Indiana to give their support to the Heyburn Bill, now before the Congress of the United States.

Passed unanimously.

Ordered, That no more equipment or apparatus or large orders for supplies shall be purchased, except by order of the Board; but the Secretary may purchase such minor supplies as are necessary for the proper conduct of the laboratory.

## REGULAR MEETING OF THE STATE BOARD OF HEALTH.

January 12, 1906.

### AFFAIRS CONSIDERED OF THE FOURTH CALENDAR QUARTER OF 1905 AND THE FIRST FISCAL QUARTER OF 1906.

Present: Drs. Davis, Wishard, Tucker and Hurty.

Called to order by President Davis at 2:20 p. m.

Minutes of the last regular, and special meeting of December 14, read and approved.

Report of Secretary for the last calendar quarter called for and read as follows:

### QUARTERLY REPORT OF SECRETARY.

Comparatively speaking, smallpox has almost disappeared from the State. No deaths from the disease occurred for the last three months, and only straggling mild cases over the State have been reported. In December small epidemics (less than ten cases) of very mild form occurred in Allen County, in Fort Wayne, also in a railroad camp in Johnson County. Only two of the nine cases in the camp ceased working during the attack. The cases were not reported for some time, as they were not suspected of being smallpox. Less typhoid occurred in the last calendar quarter of 1905 than in the same period of 1904. An epidemic was investigated by Dr. Knabe at Cambridge City, and full report by her is added hereto. Typhoid, as usual, was first in order of area of prevalence in October and November. Bronchitis was first in December. An unusual amount of tonsilitis was reported in November.

### VISITS AND INSPECTIONS.

November 1, Vincennes.—Account of meeting of the State Charities Association, to deliver an address upon tuberculosis.

November 12, Cambridge City.—By Dr. Knabe, account typhoid.

November 14, Columbus.—Account of conference with local authorities, and to deliver an address on public health before the local sanitary association.

November 17, Kokomo.—On account of smallpox.

November 23, Mooresville.—On account of smallpox.

November 26, New York.—Account of National Tuberculosis Exhibit.

December 8, Cambridge City.—On account of typhoid fever, and to deliver an address upon public health before the local teachers' association and citizens.

December 5, Lafayette.—On account of smallpox in Tippecanoe County north of the city.

December 12, Delphi.—On account of conference with local authorities, and to deliver an address upon public health before the Oracle Club.

December 12, Middletown.—Dr. Knabe, to investigate an instance of wholesale poisoning, supposed to be by ptomaines.

Complete reports of these visits are given herewith.

Vincennes, November 1.—The State Charities Association hold annual meetings in various parts of the State. This year the five days' meeting was held in Vincennes. Addresses were made on the different days by the Governor, the Lieutenant-Governor, and many eminent men from other States. The evening of November 1 was given up to a consideration of tuberculosis. The principal speaker of the evening was Dr. Frank Billings, of Chicago. In his address he made an argument for the creation of a State hospital for consumptives, which was based principally upon the experiences of physicians. He told in detail of the distressing and heart-rending incidents met with in general practice, and how it is possible for the State to save hundreds of lives annually; also prevent the breaking up of homes and the making of widows and orphans. "The first step," said Dr. Billings, "in the fight against tuberculosis by the State, is the establishing of a State hospital where poor and deserving people smitten with the disease may be taken and cured. If the State is not interested in saving helpless women and children, who shall be interested? If the State is not interested in protecting and preserving the homes, who shall be? If the State is not interested in preventing the creation of widowhood and orphanage, who shall be interested?" Your secretary was the second speaker, and was assigned the duty of presenting the consumption statistics of the State. This

was done by charts and tables drawn from the statistics of the State Board of Health.

Columbus, November 14.—The Board of Health of the city of Columbus invited me to meet with them on November 14 to consider the water supply of the city and needed sanitary reforms. At the same time I was invited to deliver an address in the evening before the Women's Sanitary Association. In the matter of the public water supply, the board was advised to adopt filtration works and not deep wells. Columbus has an unfailing soft water supply in the east fork of White River. It simply needs filtration. Some members of the council and many citizens advocate deep wells; the objections to which are that they always furnish hard water and invariably in time give out, as has been the case at Indianapolis, Muncie, and Fort Wayne. This is also true of numerous cities throughout the United States. Columbus has only a partial sewage system. It is very small indeed for the size and wealth of the community. The board was advised to advocate the building of a sanitary system of sewers. The proper procedure would be to employ an expert sewer engineer to visit the sewer system leading to every lot. It would, of course, be impossible to build this system all at once, but it would be possible to gradually construct it.

In the evening at the First Christian Church I addressed the Women's Sanitary Association, making suggestions how the said association might proceed to better affairs and conditions in Columbus, and also presenting in a general way the tuberculosis conditions in the State.

Kokomo, November 17.—Two mild cases of smallpox were discovered at the borders of the city, and there was a dispute among the physicians as to the nature of the disease. For this reason the State Board of Health was called upon for a visit. Upon arrival I was taken to see the cases. They proved to be unquestionably smallpox, and all precautions were taken accordingly.

Mooreville, November 23.—In answer to an urgent telephone message from Dr. Brackney, Health Officer, I went to Mooreville to see a case of supposed smallpox. The patient was 32 years old, and he proved to have a plain attack of severe chickenpox. He had an excellent vaccination mark, and all of the symptoms pointed to chickenpox rather than to smallpox. No quarantine

was held, and there was no increase of cases. The children in the house had all recently had chickenpox a few weeks before, and this man, a boarder in the house and a traveler, had very likely contracted it from the children. He had never had the disease before.

New York, November 26.—Permission granted, I visited New York, November 26, and remained there four days, attending the American Tuberculosis Exhibition.

#### AMERICAN TUBERCULOSIS EXHIBITION.

The American Tuberculosis Exhibition, which opened November 27 and closed December 9, was under the auspices of the National Association for the Study and Prevention of Tuberculosis and the Committee on the Prevention of Tuberculosis of the Charity Organization Society. The exhibition was in the west wing of the American Museum of Natural History on Seventy-seventh Street, near Central Park. The object of the exhibition was to show the methods that are being adopted throughout this country and in Europe to prevent and cure consumption. On the night of November 27, before an audience of at least 1,500, in the lecture amphitheater of the Museum building, addresses were made by Dr. Thomas Darlington, Health Commissioner of New York; Mr. Morris K. Jessup, philanthropist; the President of the Museum, and Mr. Talcott Williams, editor of the Philadelphia Press. On Wednesday evening, November 29, another large audience assembled in the Auditorium, and the subject of the evening was "Tuberculosis and the Labor Unions." This meeting was addressed by several labor leaders, among them J. W. Sullivan and Prof. Graham Taylor. Mr. Samuel Gompers was sick and could not attend. This meeting was also addressed by the well-known leader in philanthropy, Mr. Edward T. Divine. The speakers traced out clearly the relationship which the laboring classes have with tuberculosis. Mr. Sullivan in his speech made plain how the rich people are directly and immediately interested in the suppression of the disease. It was Mr. Sullivan who told the story, which I found was well known in New York, about Mrs. McKinley's fine dress being made in a sweatshop by consumptive women. It was supposed all the time that this dress was constructed in the

magnificent Fifth Avenue establishment from which it was purchased. The address of Prof. Taylor was exactly to the point, was eloquent, and his plea for the life and health of the laboring classes aroused much enthusiasm. Dr. Divine, scholar and philanthropist, who gives his whole life to charity work, delivered an address which was not second in effectiveness to that of Prof. Taylor. On the evening of December 1 another public meeting was held in the Museum auditorium. A crowd assembled, and not less than 2,000 were present. Dr. Herman Biggs presided. The speakers were Dr. Flick, superintendent of the Henry Phipps' Institute; Dr. Trudeau, of the Saranac Sanatorium; Dr. Bowditch, of the Sharon, Mass., Sanatorium, and Drs. Evans and Jacobi, of Chicago. There were present Dr. Jacobs, of Baltimore, and several of the faculty of Johns Hopkins University; also Drs. Pruden, Northrup, Knopf, and others representative of the New York City medical profession. Philadelphia was also fully represented, and prominent among the gentlemen from that city was Dr. Ravenel, who has made the brilliant experiments upon tuberculosis infection, through the intestinal tract. On the stage sat the millionaire philanthropist, Henry Phipps, who will give \$5,000,000 for the institution which bears his name. Mr. J. Pierpont Morgan, who is the treasurer of the Exhibition Committee, was present in the audience. This meeting on Friday evening, December 1, was of such moment as to warrant the term "epoch making."

### THE EXHIBITION.

Upon entering the exhibition room, the first exhibit to attract attention was a section, full size, of a cell in the Clinton Prison. This cell illustrated ventilation and all sanitary features. Dr. Ransom, physician of the Clinton Prison, was present, and in another part of the room exhibited statistical charts, photographs, and drawings illustrating how tuberculosis had been expelled from the prison and was no longer produced by living in that institution. The New York City Board of Health exhibit was very extensive and complete, and illustrated the work it is doing with ninety-eight large frames showing charts, pictures, diagrams, blanks, and the like. Dr. Biggs estimates that 85 per cent. of all tuberculosis cases are reported. Of the remaining 15 per cent. ten



never call a physician, and the other five is the result of neglect on the part of practitioners. We might ask: When will it be possible to make such a report as this in Indianapolis? Further illustrations of the work of the New York Board of Health were shown in two large books two feet square and six inches thick. These books showed by pictures, charts, statistics and running account, the work of the City Board in its fight against tuberculosis since the same was begun. The New York Bellevue and Allied Hospitals had striking exhibits. One of these was "a typical dark interior-bedroom, one of 360,000 in New York city, as the visiting nurses see them." The above was the sign over this reproduction. The bedstead, bed clothing, and indeed everything in the room, were transferred from a real case. Of course, the articles had been disinfected, but the room was exactly like those found in the tenements, minus the dirt. By the side of this exhibit was another of the same room after it had been remodeled and alterations effected by the visiting nurses of the tuberculosis clinic of Bellevue and Allied Hospitals and by the Tenement House Department. In the remodeled room a window had been cut through, the room itself made clean, papered with light colored paper, and made at least 50 per cent. more habitable. The New York City Tenement Department represented its work by two large cabinets of 41 leaves each, showing photographs, four on each leaf, on both sides. This made eight to a leaf, 204 photographs in all. These represented tenement house conditions. This association also showed 24 frames 2 by 3 feet, which made plain how difficult it was for the poor to live in New York, and how productive of disease such methods of living must be. Other exhibits illustrative of the above conditions of tuberculosis were made by the Presbyterian Hospital Dispensary and the Gouverneur Hospital, the St. Joseph Hospital for Consumptives, the Bellevue Hospital, the New York State Hospital for Incipient Consumptives, the Stony Wold Sanatorium, the Loomis Sanatorium, Sanatorium Gabriels, Saranac Lake Hospital, Toronto Free Hospital, Moskoka Sanatorium, Colorado Association Health Farm, Agnes' Memorial Sanatorium, White Haven Sanatorium, Pennsylvania; Johns Hopkins Hospital, Tuberculosis Department, showing the Phipps Dispensary; Visiting Nurses' Association of Baltimore, the Hampton Negro Conference, the

Massachusetts State Board of Health Hospital, the Boston Anti-Tuberculosis Association, Sharon Sanatorium of Massachusetts, the Pottenger Sanatorium of California, Craigmore Sanatorium, Colorado National Jewish Hospital, Maine State Sanatorium, Dr. Brooks Sanatorium at New Canaan, Conn., the Gaylor Farm Sanatorium, Sea Breeze Hospital, United States General Hospital, Ft. Bayard; the Newport Anti-Tuberculosis Association, the South Mountain Camp Sanatorium, California Mountain Side Sanatorium, Cal.; Maryland State Board of Health, Massachusetts State Board of Health, and the Indiana State Board of Health.

To detail all of these exhibits would, of course, be exceedingly tiresome, but to see them would be interesting and instructive, as I found it to be. Dr. Biggs remarked that the growth of the work of preventing tuberculosis astonished him. "What we see before us," said he, "has all developed within the last twelve years, and it represents a work of humanity and for medicine which is inestimable." There were exhibited models of sleeping shacks, at least a score of different methods of disposing of sputum in a sanitary way, and there were also large models in plaster of tenement blocks in New York, as they appeared before they were torn down, and again as they appear after being built in accordance with the new tenement law of the city. The Tenement Commission of New York has the power to condemn buildings and to force their demolition. They can not, however, compel rebuilding, but if the owner does rebuild, then the tenement must be constructed according to certain principles laid down in the law, and which are specifically prescribed by the Commission. The immense factor of unsanitary tenements in the production of disease has only to be mentioned to be admitted and understood. The plaster models of the old tenement building occupied a table 4 by 2 feet, and were in exact proportion. The rentals from this one block, as represented in the model, amounted to \$115,000 per year. This was called the "Lung Block," and belonged principally to the Trinity Church Corporation. It is this corporation which put up the strongest opposition to the passage of the law creating the Tenement House Commission. The model in plaster showing the new buildings was on a table 5 by 7 feet, and by looking in at the windows it was plain how every room

was provided with light and air. It is the belief of the tenement workers that the providing of pens and awful quarters increases pauperism and miserable living and does not, as is contended by the owners of these awful tenement blocks, provide shelter for those who would otherwise be shelterless.

The pathological exhibit was not so extensive as that shown at the Baltimore meeting in January, 1904. It was, however, as much to the point. The Phipps Institute exhibited 45 specimens, showing as many tissues infected with tuberculosis. Pruden, Larkin, Wilson, Delafeld and Wood made an interesting exhibit of acid-fast bacteria, to which class tubercle organisms belong, and all had many pathological specimens. Dr. Pruden exhibited seven specimens of lungs which were labeled "Carbon Lungs." The placard announced that most of the specimens were taken from persons who had died from other diseases than tuberculosis, but whose lungs were found to be filled with soot, making them black. With these lungs were exhibited those of an Eskimo and of a young child, showing how the lungs of a human being look when normal. The Eskimo was accidentally killed, and never lived in a region where soot is known. Dr. Pruden also exhibited a gelatin plate with the following notice: "The scattering of bacteria in the air when sneezing." In this notice was printed the following: "In sneezing, a fine spray or fluid from the nose or throat is driven into the air. In this way the air for two or three feet in front of the person who sneezes or coughs without covering mouth and nose, may be contaminated. If he be a consumptive, these secretions may contain tubercle bacilli. This specimen shows what was coughed four feet away when a student coughed and sneezed after rinsing mouth and nose with a culture of *prodigiosus*. The red spots growing luxuriantly upon the plate make plain the contamination of the atmosphere by coughing and sneezing." Other plates exhibited by Dr. Pruden show how flies carry tubercle bacilli on their feet. Flies were permitted to feed upon sputum, and then were placed in a glass box, the air of which was sterile, and allowed to walk over the gelatin plates. On some plates tubercle bacilli were growing, and on others *bacillus prodigiosus*, which, as we know, makes a more striking illustration.

The Saranac Laboratory showed cultures in tubes and bottles

of tubercle bacilli, also illustrating the chemical composition of this organism by showing in proportion amounts of wax, acids, fat, tissue, etc., which constitute the bacillus. To illustrate the enormous scale upon which these experiments were conducted, where a pound of tubercular bacilli must be grown, two ounces of powdered bacilli were shown. Dr. Trudeau also showed tuberculin, and bacilli emulsions. Conspicuously posted in large letters on a banner was the following resolution passed in regular meeting by the New York Medical Association:

"Whereas, There is no specific medicine for tuberculosis known, and the so-called cures and specifics and special methods of treatment widely advertised in the daily papers are, in the opinion of this Society, without special value and do not at all justify the extravagant claims made for them, and serve chiefly to enrich their promoters at the expense of poor, and frequently ignorant or credulous consumptives; therefore

"Resolved, That a public announcement be made that it is the unanimous opinion of this Society that there exists no specific medicine for the treatment of pulmonary tuberculosis; that no cure can be expected from any kind of medicine or method except the regular accepted treatment which relies mainly upon pure air and nourishing food."

Cambridge City, December 8.—Upon invitation from the town authorities I visited Cambridge City to confer with them upon various public health affairs and especially in regard to typhoid fever, an epidemic of this disease having prevailed very lately. It was also arranged that at the time of my visit I should address the Township Teachers' Association and citizens. With Dr. J. B. Allen, Health Officer, I visited twelve premises where typhoid fever existed or had existed. All but two of these were found to be exceedingly unsanitary; just the kind of places where typhoid should prevail. The disposal of sewage is exclusively by the pit method, there being no sewers in the town. The evils of this method were gone into extensively, and the town council was urged to at least begin the building of a proper sanitary sewer system. As is always the case in such instances, I suggested that a competent sanitary engineer be engaged to lay out the entire town in a comprehensive system of sanitary sewers, and that the town construct the system as rapidly as finances would

permit. Where sewage disposal is in pits, open to the air and polluting the soil, there typhoid fever will be. In all, twenty-four samples of water were analyzed from Cambridge City, and of this number fourteen were found to be badly polluted, two were suspicious, and the others passable.

Before the Township Teachers' Association I spoke upon "What Teachers Could Do to Benefit Pupils by Sanitary Methods." The address was very kindly received, and a resolution of thanks and confidence was passed.

Lafayette, December 5.—On account of an urgent telephone message from Dr. Hiner, County Health Officer, I visited Lafayette to settle a dispute in regard to the diagnosis of cases of smallpox. Upon arrival I found south of the city, in the country about three miles, a family of four, all afflicted with variola. Three of the cases were mild indeed, and the fourth could not be called severe. Quarantine was established, vaccination recommended, and all other precautions taken.

Delphi, December 12.—This visit was made to confer with the authorities in regard to needed public sanitary works. Delphi has an excellent water supply from deep wells, but no sewers. Sewage disposal is affected entirely by pits. The usual argument against this method was presented; also the usual advice given that the city employ an expert engineer to lay out the place in a comprehensive system of sanitary sewers, the same to be built as rapidly as finances would permit. The authorities were also urged to give strong support to the Health Officer in his efforts to raise the standard of public health.

In the evening I addressed the Oracle Club in the auditorium of the city high school. The title of the lecture was "Public Health Is Public Wealth," and was illustrated by lantern slides. The lecture was well received, and a vote of thanks given, together with a resolution of confidence in the State Board of Health and praise for its work.

#### REPORT OF TYPHOID FEVER EPIDEMIC AT CAMBRIDGE CITY, INDIANA, INVESTIGATED BY DR. HELENE KNABE.

Pursuant to the order of the State Board of Health, the undersigned went to Cambridge City, November 14, 1905, to investigate the epidemic of typhoid fever which had been reported from there. This investigation disclosed the following facts:

Cambridge City has a population numbering 1,700, is situated on White Water River, and part of the town is bisected by a small canal. The streets are fairly kept and reasonably dry.

There is no general system of sewage in this town, but some of the residents whose lots border on the canal have connected their stables and outhouses with the latter, and the sewage is washed into the water. These, however, represent only a very small percentage, and in the larger part of the town the surface privy is the only means for the disposal of filth. During the last summer this condition resulted in a singular boycott, because the farmers objected to having the vaults emptied into their property, and as a result the filth of the whole town accumulated for several months, unfortunately through the hottest season, when flies were plentiful. All the wells in Cambridge City are very shallow, usually from sixteen to twenty feet, penetrating only into the gravel and only protecting the people from drinking the immediate surface water.

At times, for instance during heavy rains, or when the river is high, the canal overflows and floods a large area of the tract surrounding the canal, including a lot upon which the garbage of the town is dumped. This place is very unsightly and malodorous at all times.

Cambridge City is supplied with water works, but this water is not used for drinking purposes, because the water from the canal occasionally gets into the pipes, badly polluting the supply. In fact, one of the cases sick at the present time is known to have been infected through drinking water which came through one of the water works pipes.

From the records of the Health Officer I learned that there had been two cases of typhoid fever reported during July. Another case was reported on September 1. These three cases soon recovered and I was not able to see the persons. At the present time there are eight cases in various stages of the disease. Four persons have recovered from slight attacks of typhoid fever, but I was able to make a positive diagnosis by the Widal test. Two deaths have occurred so far. Raymond Goodwin, who died October 15, and Mrs. Brier, who died November 10. Some of the cases can not be traced to any definite source, and it is my opinion that flies are responsible in these instances. The conditions surrounding some households are so unsanitary that they are a menace to the whole community. In one instance a family consisting of a father, mother and six children ranging in age from one to twelve years, live in a miserable little house made on the order of a woodshed, with a tiny kitchen added. The house has two rooms, one bedroom just large enough to hold two plain double beds and leave a space of two feet between beds and wall. The other room contains an old lounge, a stove, two chairs and a baby carriage, and is not large enough to accommodate the whole family at one time. Either one of the rooms has only one window, which, needless to say, is never opened. Bedding was given to the people a short time ago by the "Charity Organization of Cambridge City." The father, James Goodwin, and two of the children, Mary, ten, and Mamie, eight years old, are sick with typhoid fever. The children are recovering, while the father was at the height of the disease at the time of my visit. The whole house is in an extremely filthy condition. The way these people live is best shown by a remark which one of the children made

some time ago when asked if Mamie slept alone, as the physician had directed. The child said, "Oh, yes, nobody sleeps with her except mama, baby and my other sister."

The surroundings of this house are as bad as they can possibly be. A very dirty hogpen and an outhouse in even a worse condition are about sixty-five feet away and on a considerably lower level than the well, which is a few feet from the house. The ground is strewn with filth for many feet around. These people did not disinfect anything, even though the physician who attended the case stated that he gave them disinfectants and instructed them in their use.

The schoolhouse of Cambridge City is a three-story brick, in which nine rooms are used for teaching purposes every day. It is heated by furnace, but there is no system of ventilation. The rooms on the third floor are used for the high school pupils and the lower grades are on the first and second floors. I also inspected the outhouse, finding it in a very unsanitary condition. There is no system of flushing it and the odor was very bad. It was stated that disinfection was practiced twice a week, but I advised that it be done every day regularly. The vault is cemented and connected by a pipe with the river. A sample of water from the well in the school yard was collected for examination.

During my stay at Cambridge City I made inspections at different houses situated at a low level, and found in two of them patients suffering of tuberculosis. Another case of suspected tuberculosis was referred to me by one of the physicians for diagnosis. The physical, as well as the examination of the sputum, showed the case to be far advanced. Two other cases suspected of having typhoid fever gave negative Widal reaction.

On Friday, November 17, I inspected the Sunny Side Dairy, managed by Mr. Moffitt. The stable was in bad condition, lacking the gutter. Horses were kept in the same stable and the ground in front of the door was soaked with the seepage from the stable, making it almost impossible to get into it. A very dirty trough was used to water the cows. The milk cooler as well as the buckets and bottles, are kept in a box outside the house, where they, of course, will be aired well, but are also open to the dust. The well is near the house and only about 35 to 40 feet away from a privy that is no credit to the owner of the place. I went also to the Jersey Dairy, in charge of Mr. Coop. The place is situated on a high ridge and the surroundings as good as could be required. The stable gives shelter to twenty-five cows. In one corner of the large square building some horses were kept, but they are entirely remote from the cows. The cows are watered from a spring in the woods, which is well protected and is not likely to be polluted. The milkhouse is scrupulously clean and is provided with a cooler according to the law, and the whole place is kept as well as can be under the circumstances. Mr. Coop asked to be given a copy of the rules of the State Board of Health governing the operation of dairies.

Summary. Number of patients visited, eighteen; cases of typhoid fever, twelve; tuberculosis, three far advanced cases and one incipient case; grippe, two; Widal tests, seven; positive, five; negative, two; dairies inspected, two; one schoolhouse inspected; samples of water sent to Laboratory of Hygiene, ten; many typhoid circulars distributed.

## THE THIRD ANNUAL HEALTH OFFICERS SCHOOL FOR TOWN OFFICERS.

The third Annual School for Town Health Officers was held in Indianapolis December 14 and 15. All town officers were summoned as usual and attended. The Claypool Hotel was headquarters, and all sessions were held in the auditorium of the hotel. The first session was promptly called to order December 14, at 10 a. m., by Dr. F. A. Tucker of the State Board of Health. The first paper was entitled "Insects and Disease," and was read by Dr. Hurty. This paper was discussed for fifteen minutes, and then a lecture was given by Prof. Severance Burrage, entitled "The Science of Disease Prevention." The conference adjourned at 12:15 to visit the laboratories and to call upon the Governor at 2 o'clock.

The Governor received the health officers very graciously, shaking hands with each one, and made a short speech in which he particularly urged them to make every effort to collect accurate vital statistics, for, said he, "Accurate vital statistics are of the greatest importance to the State, and they furnish the particular foundation upon which must stand disease prevention work." Dr. Tucker read a paper entitled "The Prevention of Tuberculosis," which was discussed at length. Dr. Tucker's essay dealt with the extent and destructiveness of tuberculosis in Indiana; it exhorted the officers present to thoroughly inform themselves in the important public movement against tuberculosis; to inform themselves in the early diagnosis of the disease, and to spread among the people the knowledge that in its early stages consumption is one of the most curable of maladies. Dr. Davis then read a paper entitled "The Air We Breathe," which was also discussed with interest. This paper briefly and clearly reviewed the extent and character of the atmosphere and its very great importance to health. This paper was remarkable for concentration, and contained enough points and facts to serve the general writer for several papers. Dr. Knabe read a paper entitled "A Laboratory View of the Infectious Diseases." In this paper Dr. Knabe told the officers how the infectious disease problem looks from the laboratory. She made plain how great the service was which the laboratory could render in the early diagnosis of diseases. The session closed with another lecture from Prof. Bur-



rage continuing the subject of the forenoon. Prof. Burrage is an excellent teacher, and presents his ideas clearly, and he made plain to his hearers the fundamental principles of disease prevention.

The evening session was called to order at 8 p. m. by Dr. Davis. Reports of health officers were listened to for an hour and a half, five minutes being allowed to each officer. At this point Dr. Davis suspended the reports until the next session to hear a lecture by Prof. H. E. Barnard, Chemist of the Board, entitled "Polluted Water in Indiana." Prof. Barnard reviewed the water work so far done in the laboratory, and made plain the benefits derived therefrom. He reported that the laboratory was now making a sanitary survey of White River, and within another year expected to have maps, analytical tables, and a full history showing this system as it now exists and giving its probable future usefulness. Prof. Barnard said that one of the great problems in Indiana today was that of the prevention of stream pollution.

The fourth session was called to order at 9 a. m. December 15 by Dr. Davis. Dr. T. Victor Keene, Superintendent of the State Laboratory of Hygiene, gave a lecture entitled "Experiences in Sanitary Work in Indianapolis." In this lecture Dr. Keene related in detail the experience of the Indianapolis Health Department in its efforts to secure pure milk and pure water. He also told many interesting and instructive experiences in medical school inspection in the management of infectious diseases. Following this, Prof. Barnard gave a lecture, "Food Adulteration in Indiana." Prof. Barnard reported that to date over 1,000 samples of foods and drugs had been examined, and 49 per cent. were found not up to standard or adulterated. Of 132 samples of vanilla, only 11 met the standard. Of 145 vinegars, only 12 proved to be what they were sold for. Of 58 samples of lime water purchased in various parts of the State, only 33 were found up to standard. Prof. Barnard truly stated this was a deplorable condition, and it should be righted as soon as possible. After Prof. Barnard's paper on "Food Adulteration in Indiana," and after some discussion, the following resolution was adopted:

Whereas, The members of this Association, being fully aware of the viciousness of food adulteration, both as an insidious attack on the

public health and as an economic fraud, and realizing the necessity for a National Pure Food Law to control interstate commerce in foods, and believing that such a law would relieve the conditions which make Indiana a dumping ground for the products of other states;

Resolved, That this Association urge the Senators and Congressmen of this State to use their strongest efforts to secure the passage of the Heyburn bill.

Unanimously carried.

The next order was a lecture entitled "The Tuberculosis Sanatorium," by Dr. H. H. Cowing, Health Officer of Delaware County. Dr. Cowing had lately visited the various sanatoria in the East, remaining for some time at the Adirondack Cottage Sanatorium, which institution was founded by the well-known Dr. E. L. Trudeau. Dr. Cowing reviewed the disposition and methods of cure by the outdoor life, plain food and regular living. In conclusion, he exhorted the health officers to keep constantly in mind the necessity of a State Tuberculosis Sanatorium in Indiana, and that they lend their fullest influence and efforts to secure the same. The exercises closed with a lecture by Dr. W. T. S. Dodds, of Indianapolis, upon "The Early Diagnosis of Consumption with Clinic." Dr. Dodds said that physicians did wrong to wait for the appearance of the classical symptoms of tuberculosis, but they should tell the patient of his affliction. The cure of tuberculosis, he said, depended largely upon discovery of case when in its early stages. The early symptoms were: "tired feeling," accelerated pulse, rise of temperature in the afternoon, with possibly sub-normal temperature in the morning, a dry, hacking, or rather an unproductive cough, for there is really no such thing as a dry cough. Even in apparently dry, hacking coughing, the patient sprays droplets of spittle into the air. If, with these symptoms, there is a loss of weight, and even if the sputum does not show the presence of an organism, and unless it is positively known that the said symptoms are due to other causes, it should be assumed that incipient tuberculosis exists.

As usual the attendance at the close had grown very small, but those who remained were enthusiastic, and from every indication one would judge they desired to hear more. Several officers took occasion to remark that this was the best conference or school they had so far attended.

# REPORT OF THE INVESTIGATIONS AT MIDDLETOWN, INDIANA, SUSPECTED PTOMAIN POISONING.

By Dr. Helene Knabe.

I was sent to Middletown December 12 to investigate some cases of suspected ptomaine poisoning which had occurred at the Welsh Hotel November 30, after the guests had partaken of a hearty dinner.

On my arrival I visited Dr. Waters, the Health Officer of the town, who was one of the guests at that dinner and made sick at that time. The doctor was kind enough to furnish me with a list of the names of the persons which were sick with what seemed to be poisoning, and he also gave a very clear history of the state of affairs as they occurred November 30. I found there were about twenty-four cases at the hotel and twelve cases outside. The persons who are named in the following list, "outside cases," had not come in contact with anybody from the hotel, nor had they obtained any food from there. Still the symptoms are identical with those at the hotel and in some of these cases they were very severe. The time during which this sickness appeared was the week from November 26 to December 3.

The list of cases in their order of occurrence is as follows:

## November 28—

At Hotel: \*Lamb, Leon (waiter).

## November 29, 8 to 12 p. m.—

At Hotel: \*Bicksler, Mr.; \*Elliott, E. L.; \*Waters, Dr. S. C.; \*Welsh, Mrs. Anna (owner of hotel), slightly sick next night; \*Munden, Mrs. (cook), sick three days.

Outside Cases: Fink, boy, age five, mild, no diarrhea; \*Snellenberger, Mr.; \*McKenzie, Mrs., mild case; \*McKenzie, Mr., severe case; \*Wallace, Dr., severe case; \*Tykle, Mrs., severe case.

## November 30, 3 to 8 p. m.—

At Hotel: \*Kent, Mrs. (landlady); \*Burk, Marion (waiter); Jackson, Olla (waiter), sick next morning; \*Munden, boy, ten years (the cook's son); \*Cooper, Frank; \*Cooper, Edna; \*Cooper, Carrie, mild; McRoy, Mr.; Pritchett, boy, age ten years; \*Miller, E. P.; Daniels, J. E., took dinner to nurse who did not get sick; Levy, Mr., mild; Levy, Mrs.; \*Waters, Mrs., immediately after dinner went to Indianapolis, taken sick there at 7 p. m.; Boarder (traveling man), taken sick at noon; \*Wright, Miss Sarah (laundress), taken sick at 11 p. m.; \*Bicksler, Mrs.

Outside Cases: \*Cassada, John; Hodson, Gertrude; \*Moore, Mr. (works in restaurant).

## December 3—

Outside Cases: \*Wood, Mr., severe; Wood, Lee, severe; Young Man.

\*Cases seen by Dr. Knabe.

The attacks in every case began very suddenly with vomiting and purging. Most all of the cases at the hotel commenced shortly before supper on the evening of November 30. In all cases the prostration was pronounced and strychnine and nitroglycerine had to be given hypodermically. Dr. Waters, who had been sick the day before, attended the people at the hotel. Some of the patients complained of severe cramps

in arms and legs, and in the cases of Mrs. Welsh, Mr. Daniels, and Mrs. Bicksler these cramps appeared in the slightest over-exertion every day since. Dr. Thornburg, who treated Mr. Daniels during his attack stated that the vomitus of the patient was of a decided pink color, resembling that of a weak solution of Potassium Permanganate. During my stay at the Welsh Hotel I endeavored to find out the ways in which food is prepared there, but nothing that is not in keeping with the laws of cleanliness was to be seen anywhere. Mrs. Kent is always in the kitchen during meal time and supervises everything. The cooking utensils are of enameled ware and a few frying pans of the ordinary kind are also in use. All dishes and cooking utensils are kept very clean and the same can be said of the cupboards and, in fact, the whole house.

The menu for the Thanksgiving dinner consisted of roast turkey and duck, potatoes, celery, stewed cranberries, oyster dressing and ice cream. The fact that three guests for dinner and one for supper, as well as the landlord, Mr. Kent, and the chambermaid, did not get sick, though they had eaten of all the victuals which were provided, makes it doubtful that the cases were food poisoning. The question was raised that it might be the work of a person who desired to bring the hotel into disrepute, but as Mrs. Kent is always there before meal time and stays in the kitchen until all guests are served, makes it rather difficult to see how anyone could get at the food without being seen by her.

The cases that occurred in Middletown during that week are so much alike to those in the hotel, showing the same symptoms, viz.: vomiting, purging, profound prostration and remarkably quick recovery. The cases on the list marked with a star I have seen personally, and of the others the history was given by the attending physician, and all cases outside of the hotel I have carefully traced as far as possible and excluded any connection with the cases in the hotel.

The people at the hotel had not eaten the same food in the same amount and many of those who became ill had eaten very sparingly, while of the ones who escaped the trouble some had eaten heartily. There seems to be no ground to think the ice cream caused the sickness, because some cases occurred before Thanksgiving dinner, when they did not eat any cream. The same reason would rule out the oyster dressing and the vegetables; also no canned eatables were used and all the guests did not eat of every one of them. Also the fact that with the exception of two of the patients none that had been sick on November 29 was sick again on November 30. For Mrs. Welsh's case there is also an explanation, because this lady is in some legal difficulties and thought she was poisoned by her antagonist; she is very nervous and naturally would not get well so quick.

It is impossible for me to come to a solution of the question, and as in no cases vomit was saved the examination of which would probably have given a clue to the cause of the trouble, I can not see how it is to be settled definitely.

During my stay at Middletown I visited the schoolhouse. It is a brick structure containing six rooms. The water is supplied by the public water works of the town, and the building is heated by steam. The schoolhouse is supplied with toilet rooms for the girls, which are in the

basement and are in good condition, there being one of the usual public toilets with automatic flushing system. The toilet rooms for the boys are on the same order and some distance away from the main building.

While inspecting the room in which the smallest children are taught, I noticed that many of the children had bad colds, and the teacher stated that many of them had stayed home a few days, and at the time of my visit five were away. Inspection of the throat did not show anything alarming. The pharynx was pale, tongue very slightly coated and the papilla reddened, giving the appearance of a mild degree of the so-called "strawberry" tongue. There was a hollow cough, entirely unproductive, present in all cases affected, and slight coryza. I spoke to Dr. Waters about it, suggesting that it might be a mild epidemic of scarlet fever, and he promises to watch for any cases developing among other children.

Some cases of a skin disease that seem to have been brought there from Anderson proved to be scabies, and the treatment which the doctor has given is making an end to that.

In closing I would like to call attention to the unsanitary condition of the waiting room in the Terminal Station at Anderson. There is no ventilation except when the door is opened, and the appearance of the floor under the cases of a candy department that is in the front part of the room was anything but sanitary.

#### HYGIENIC LABORATORY.

The Bacteriological and Pathological Laboratory is now in full operation. Dr. Keene commenced regular work January 1, 1906. Prior to this Dr. Keene gave considerable time to the making out of lists for apparatus, furniture, etc., also in arranging the laboratory. Outfits for collecting samples of sputum and blood, and for diphtheria cultures have been sent to all applicants, and to January 1 the following examinations have been made:

#### EXAMINATIONS MADE IN DIVISION OF BACTERIOLOGY AND PATHOLOGY UP TO AND INCLUDING DECEMBER 31, 1905.

	Positive.	Negative.	Total.
Tuberculosis .....	59	20	79
Typhoid .....	22	4	26
Diphtheria .....	30	15	45
			<hr/> 150

## CHEMICAL LABORATORY.

The analyses made to date are published in the monthly bulletin for November, and following is a summary:

## SUMMARY.

*Foods.*

Articles Examined.	Number Found to be of Good Quality.	Number Adulterated or Varying from Legal Standard.	Total Number of Articles Examined.	Percentage of Adulteration.
Butter .....	4	4	8	50.0
Cream .....	28	18	46	39.1
Milk .....	225	57	282	20.2
Lard .....	5	7	12	58.3
Olive oil .....	65	40	105	38.1
Oysters .....	21	5	26	20.0
Sausage .....	36	67	103	65.0
Miscellaneous meat products.....	10	7	17	41.0
Codfish .....	..	4	4	100.0
Cream of tartar.....	107	1	108	1.0
Lemon extract .....	15	214	229	93.4
Vanilla extract .....	11	121	132	91.5
Vinegar .....	12	133	145	91.7
Miscellaneous food products.....	19	1	20	5.0
Total food products.....	558	679	1,237	54.97

*Drugs.*

Alcohol .....	63	32	95	37.6
Lime water .....	33	25	58	43.1
Tr. of Iodine.....	2	19	21	90.5
Total .....	98	76	174	43.6

The following table shows the status of smallpox for the quarter:

	No. of Cases Reported.	Deaths.	No. of Counties Invaded.
October, 1904 .....	226	18	29
October, 1905 .....	0	0	0
November, 1904 .....	355	12	37
November, 1905 .....	84	0	5
December, 1904 .....	472	8	38
December, 1905 .....	112	1	13

By the above table comparison shows: Cases decreased 81 per cent.; deaths decreased 97 per cent.; area invaded decreased 82 per cent.

Ordered, That the Secretary's report be spread of record.

## AMERICAN TIN PLATE COMPANY.

The following letter was read by the Secretary:

Hon. Board of Health of Indiana, Indianapolis, Ind.:

Gentlemen—We hereby respectfully request that you renew our permits for emptying into streams waste water, etc., from our several plants in this State, comprising the following: Elwood, Anderson, Gas City and Muncie.

Yours very truly,

THOMAS O'BRIEN, District Manager.

After discussion it was ordered that the permits of last year be renewed.

ORDERED.—The Secretary was given permission to purchase certain supplies for the Bacteriological Laboratory, a partial list of which was presented.

## SPECIAL MEETING.

March 7, 1906.

Called to order by President Davis at 10 a. m.

Present: Drs. Davis, McCoy, Wishard, Tucker, and Hurty.

President announced the special meeting was called to consider sanitary surveys of three schoolhouses, as an urgent demand had been made by citizens.

## SCHOOLHOUSE AT WINGATE.

Survey.—This is a two-story slate roofed brick building built about 1890. It contains four recitation rooms, four cloak rooms and two halls. Main building 37 by 52 feet. Hall 17 by 18 feet, outside measurement. Basement under main building about 6½ feet, with dirt floor. Two furnaces are used to heat the building, and their foundations had to be dug about 18 inches below the level of basement floor to set them up. Even with that, they are too close to the floor above, and there is danger of setting fire to the building, as the joists above them are charred and blackened with the heat. The walls of the building are built solid from the foundation, with no stone or slate between the basement and main building to check the rise of moisture.

The schoolrooms are 25 by 34 feet, with 11-foot ceilings in lower and 12-foot ceilings in upper rooms. Each room has a four-foot cloak room attached. There are ventilators in each room connected with the basement for the supply of fresh air, and

opening into the attic for the outlet of the foul air, but are not satisfactory. The teachers state that they have to open the windows to air the rooms, and that if the windows are open in one room, they can not keep the other rooms warm. (Many of the pupils were wearing wraps in the room that day.)

The rooms are papered, but owing to the moisture in the walls the paper is coming off badly in every room. The plastering is badly cracked in the two lower rooms, the west upper room and both halls. The floors are badly worn in the lower rooms and will need repairing next fall. The windows have good blinds; the floors are oiled and clean, the seats in good shape and of height to suit the pupils. The stairway is 5 feet wide to a 7-foot landing, then divides into two 3-foot reverse stairways to the hall above.

The janitor stated that it was impossible to keep the rooms warm on cold, windy days, and that school had to be dismissed last year for several days on that account; he said that moisture would accumulate on the walls in cold weather so that the paper would come loose and the water run down to the floor. In wet weather that water came into the basement, making it very hard to keep the furnaces going, although it had never gotten into the fire-boxes. He also stated that the ringing of the school bell or slamming of the front door to the hall would shake the whole building. He did not consider the building dangerous.

The enumeration of pupils is 190. There are three and one-half school districts attending this school now, and if more room was available there would be two and one-half more that would be brought there. There are five teachers—four in the school building and one in the town hall, which is being used as a school-room for the overflow pupils. The Trustee, Mr. H. T. Van Cleave, states that he will have to add more rooms to or rebuild the schoolhouse or repair and practically rebuild three others in the county districts. He thinks it economy to tear down this building and put up a modern one that will accommodate all the pupils in one school. He also says the township is out of debt and can build.

H. M. Dickinson, Principal, stated the building was unsanitary, could not be properly heated and was too small and could not be remodeled to advantage.

J. M. Allhands, Assistant, stated same as above and also said



there had been a great deal of sickness from colds and sore throat in his room, which he was sure was caused by dampness of the walls and the impossibility of keeping the rooms at a uniform temperature.

Dr. T. H. Allhands, Health Officer, has had two cases of pneumonia and several cases of tonsilitis among the pupils that he considers as directly traceable to the unsanitary condition of the school building.

R. N. Cordig, Member of Town Council, thinks the building is wholly inadequate to the needs of the school, that it is unsanitary, improperly constructed, and can not be remodeled economically, and advises that a modern sanitary building be erected.

J. A. Long, Postmaster, endorses Mr. Cordig's views.

### *Summary.*

The building is unsanitary, improperly constructed, can not be remodeled or added to economically, and it is respectfully recommended that it be condemned for school purposes to take effect at end of present school term.

After full consideration the following proclamation was adopted:

#### PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Wingate, Montgomery County, Indiana, is unsanitary and unfit for housing school children; therefore, it is

Ordered, That said schoolhouse is condemned and shall not be used for school purposes after April 1, 1906.

Any violation of this order shall be promptly prosecuted by the Attorney-General according to the statutes provided.

#### SCHOOLHOUSE AT CLAYTON.

Survey.—This is a two-story brick, with belfry tower, containing four rooms 27x28 feet, two recitation rooms 12x22 feet, two halls and one 5-foot stairway. The building is well lighted and kept in neat, clean condition. Walls are painted and papered, good blinds at the windows and heated by soft-coal stoves in each room. Ventilated by doors and windows. Was built in 1883. The chimney at the south end of the building is split at the top for two or three feet and the wall is cracking and bulging outward at the junction of the upper and lower rooms. The brick in the

walls is very soft and could be easily broken and crushed and shows by its freshly broken condition that the whole wall on the south end is in danger of collapse. There is an iron rod run through the walls over the door of the entrance hall to keep them from collapsing and the wall is badly cracked to the belfry tower. There is no basement under the building, but a coal cellar has been dug under the northwest corner. The trustee who had this work done failed to build a wall under the foundation of the building, and as the water runs into the cellar whenever it rains, this corner of the building has settled and threatens to give down. A person jumping up and down in one of the upper rooms causes the whole building to quiver and windows and doors to rattle. The floors in the schoolroom are worn out, and it must be re-floored, and the halls in one or two rooms need replastering.

The enrollment is 194. There are five teachers and the high school course. The room used for the high school course contained 70 pupils. There are three districts combined in this school and the Trustee desires to bring in one or two more, or otherwise he will have to rebuild two one-room houses. The schoolyard contains two and one-half acres of ground and is well adapted for the purpose. The water closets are screened and have dug vaults. There are no walks to them.

A talk with Mr. Miller (a member of the Advisory Board) and others shows that the citizens consider the building unsafe for use. Dr. A. K. Gilbert, Township Trustee, stated that he had an architect furnish an estimate of cost of adding two rooms and remodeling the building, and that it would cost about \$6,000 to do the work.

It is respectfully recommended that the building be condemned as absolutely dangerous to life as well as unsanitary.

After full consideration the following proclamation of condemnation was adopted:

#### PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse at Clayton, Hendricks County, Indiana, is unsanitary and unfit for housing school children; therefore, it is

Ordered, That said schoolhouse is condemned and shall not be used for school purposes after April 1, 1906.

Any violation of this order shall be promptly prosecuted by the Attorney-General according to the statutes provided.

## SCHOOLHOUSE AT AVON.

Sanitary Survey.—The building is a four-room, two-story brick with a slate roof. No basement. It was built in 1880, but burned down and was rebuilt in 1885 and an additional story added. The walls of the lower story are about 14 inches thick and the upper walls about 9 inches thick. The walls are beginning to crack and split open around the windows and doors. The rooms are  $21\frac{1}{2} \times 30$  feet. There are two halls  $10 \times 30$  feet and a single narrow stairway. No cloakrooms and no heat in the halls. The partition wall between the two lower rooms is cracked from bottom to top and beginning to open. The floors are worn out and full of cracks and the rooms all need replastering. The building is heated by two "Johnson's Ideal heater and ventilator furnaces," one in each lower room and heating the room above by a hot air pipe. There are ventilators in the floors of the lower rooms besides the ones connected with the heaters, but they have to be kept closed, as it is impossible to warm the rooms when they are open. There are no ventilators in the rooms above. The walls have been painted, floors oiled and blinds at the windows. Desks in fair condition and of suitable heights for the pupils. The building has been well taken care of. The water closets have good gravel walks leading to them and are screened. There is a good frame barn about  $30 \times 60$  feet on school lot. The location of the buildings is bad, the ground being low and without any outlet for drainage. The Danville and Indianapolis interurban line runs within fifty feet of the front door, having taken sixteen feet off of the school ground for right-of-way.

The enrollment of the pupils is 135, there being five districts combined in one school. There are four teachers. Mr. E. E. Blair, Township Trustee, reports the township out of debt.

*Summary.*

The building is old, improperly constructed, and is unsafe and unsanitary at the present time. If repaired, will have to be strengthened, newly floored and plastered, and two additional rooms built to accommodate the number of pupils in attendance. The location is very bad, being so low that it is surrounded by water in wet weather, and there is no means of drainage. I

would respectfully recommend that the building be condemned and a new one be erected in some better location.

Inspection made February 1, 1906.

After full consideration the following proclamation order was adopted:

#### PROCLAMATION OF CONDEMNATION.

Whereas, It has been shown to the satisfaction of the State Board of Health that the schoolhouse number 6 at Avon, Hendricks County, Indiana, is unsanitary and unfit for housing school children; therefore, it is

Ordered, That said schoolhouse is condemned and shall not be used for school purposes after April 1, 1906.

Any violation of this order shall be promptly prosecuted by the Attorney-General according to the statutes provided:

Ordered, That the next lot of report blanks for reporting births and contagious diseases be so arranged that three birth blanks be inserted for one contagious disease blank.

Ordered, That when a new lot of death certificates be printed that the word "chief" be stricken out in the phrase "chief cause" and inserting "immediate," making the phrase read "immediate cause."

Committee.—Upon suggestion of the President, Drs. Wishard and McCoy were appointed a committee to report at the next meeting on the advisability of requiring that certificates of births and deaths be reported occurring prior to the seventh month of gestation.

#### PROPOSAL FOR CO-OPERATION.

The following letter was read:

Department of Interior,  
United States Geological Survey,  
Hydrographic Branch,  
Washington, D. C., January 30, 1906.

Dr. J. N. Hurty, Secretary State Board of Health, Indianapolis, Ind.:

Dear Sir—During my visit to your office on January 20th the proposition that the Geological Survey enter upon co-operative work with the Indiana State Board of Health was discussed briefly. It seems desirable to enter upon some negotiations with the object of bringing about some mutual arrangement whereby investigations of the character of stream waters of the State of Indiana may be carried on during the fiscal year beginning July 1, 1906.

There are several lines of investigation which would be profitable and beneficial to the interests represented by both parties above mentioned.

4—Bd. of Health.

The first is a general investigation of the character of the water flowing in the streams of the State. The principal purpose of such work will be to determine the water resources and their damage by pollution. It is a generally accepted idea that waters in streams which drain inhabited countries are not constantly fit for domestic consumption in their raw state. In observing conditions in Indiana during the past few years it has become the conclusion that all of the Indiana drainage areas are at one or more points densely populated. Therefore, the above contention is true for the entire State. Accepting these premises, it is apparent that the cities using surface waters must eventually provide means for their purification. It is also true that the larger cities of Indiana must, for many reasons which will not be reviewed here, eventually take their supplies from the running streams. It follows that one of the most useful lines of investigation will be to determine the character of such waters and their variation from day to day, so that there will be on hand just the data necessary for the intelligent installation of purification systems. The determination most useful in such cases are turbidity, color, odor, total solids, suspended solids, lime, magnesia, iron, sodium, potassium, chlorides, sulphates, carbonates and bicarbonates. The usual practice in such an investigation as is here proposed is to establish permanent sampling stations at chosen points along the rivers and to have forwarded from such stations 4-ounce samples of water each day. These samples when received at the laboratory are then stored in larger bottles, each station being represented by a storage bottle in the laboratory, until a sufficient amount is accumulated to make it advisable to determine the ingredients and characteristics above noted. Such a result will represent the composite of the various samples. Generally such analyses are made every week or ten days.

If this arrangement is desirable an appropriation could be made by both parties. That made by the Survey could be expended in salary for a chemist to be furnished by the Survey, while the State appropriation could be expended for the salaries of local observers and for such transportation charges and laboratory equipment as would be found necessary, adjustments being made at the end of the year, so that the expense of each party could be equal. This is a very simple plan and of undoubted benefit. Its usefulness, however, is confined more or less to the future when the cities decide to provide water purification systems.

Another plan would involve an investigation of the pollution of the streams, that is, a determination of the effect of sewage and industrial wastes, and the extent of their influence down stream. You will note that such an investigation would be directed more exclusively toward sewage disposal than water supply. It seems as though under the prevailing conditions in Indiana this would be a more immediately useful work than that previously described. It would also involve investigations concerning the effect of various industrial wastes and the best methods of disposing of them or recovering valuable ingredients therein, which in practice has the same final result. Under such an arrangement the Survey would provide a man who would do practically all the field work and a part of that in the laboratory, while it would make use at the same time of some of the laboratory assistants which you have already provided.

It is hoped that you will give this matter your consideration and present it to the Board of Health for action if it is deemed wise.

Very respectfully,

M. O. LEIGHTON,

Hydrographer in Charge. Division of Hydro-Economics.

After consideration, it was moved by Dr. Davis, that, inasmuch as the means now at the command of the Board would not admit of co-operation as proposed, therefore, the Secretary should inform Mr. Leighton and say that the Board would present the matter to the next General Assembly and ask for a special appropriation for making sanitary stream surveys.

#### HAM PEDDLING.

Ordered, That the following letter should be sent out to all county health officers:

#### WARNING.

Dear Doctor—Men from Chicago dressed like farmers have been caught selling tainted hams in Indiana. They buy tainted hams from the packing houses, doctor them up, ship them to any point, then hire horses and wagon and peddle them at 2 to 3 cents under the market. The hams appear to be all right until slices are put into the frying pan, and then the taint fills the kitchen. The meat is unfit to eat. Many of these tainted hams were sold in Columbus, Greensburg, Mt. Vernon and other places. At Franklin one T. Scantlan was arrested upon information from Columbus, but was released on bail and disappeared.

Please inform the sheriff, city and town health officers and police authorities to be on the watch for ham peddlers. Also make the matter public in the papers.

P. S. The Laboratory of the State Board of Health is open for free food, drug and water analyses, also for free bacteriological and pathological examinations. Rules governing laboratory free work enclosed.

## SECOND QUARTER.

### Regular Meeting.

#### AFFAIRS CONSIDERED OF THE FIRST CALENDAR QUARTER OF 1906 AND THE SECOND FISCAL QUARTER OF 1906.

April 13, 1906.

Present: Drs. Davis, Wishard, McCoy, Tucker and Hurty.  
Called to order by President Davis at 2 p. m.

Minutes of the last regular and special meeting of March 7th read and approved.

Report of the Secretary for the first calendar quarter called for and read as follows:

#### REPORT OF SECRETARY.

The statistics show for this quarter a marked diminution in diseases and death as compared with the same quarters in all of the statistical years beginning 1900. The death figures appear in the appended tables, also the prevalence of disease. Smallpox during the quarter shows a decided decrease, and the special table for this disease makes this plain.

	No. of Cases Reported.	Deaths.	No. of Counties Invaded.
January, 1905 .....	238	7	27
January, 1906 .....	80	0	10
February, 1905 .....	381	8	35
February, 1906 .....	152	0	15
March, 1905 .....	251	1	29
March, 1906 .....	124	0	16

By the above table comparison shows: Cases decreased 59 per cent.; deaths decreased 100 per cent.; area invaded decreased 55 per cent.

## VISITS AND INSPECTIONS.

The Secretary during the quarter made five visits in answer to urgent invitations and herewith are full accounts of said visits.

## REPORTS OF VISITS AND INSPECTIONS DURING THE QUARTER.

Rushville, January 9th.—The Secretary visited Rushville on this date to confer with Prof. William O. Headlee, County Superintendent, and the trustees of the county in the same way as set forth in the records of the visit to Connersville, and the same work was done and the same results secured as were so happily accomplished at Connersville. While there, W. H. Smith, city health officer, called my attention to a case of sickness which followed the administration of Dr. Hand's cough and croup cure. Accordingly a bottle of this medicine was purchased and examined in the laboratory. The symptoms recorded by Dr. Smith were those of the action of morphine, and so the medicine in question was examined for this drug. The analysis showed morphine to be absent and the depressant action noticed was, I believe, due to the presence of lobelia.

Lebanon, January 20th.—On the above date I visited Lebanon to address the Boone County Teachers' Association in regard to the public health work of the State Board of Health, and to confer in regard to school sanitation in that county. In addition to eighty teachers, there were present many citizens. The usual phases of the subject were gone over and a promise was given by a rising vote of all teachers present, that they would study the contagious disease circulars of the State Board of Health, and from time to time teach their contents to their pupils.

Connersville, January 25th.—The Secretary went to Connersville to attend the meeting of the sixth Councilor District of Physicians, to read a paper in regard to the work of the State Board of Health and to discuss the "Combat Against Tuberculosis." The meeting was very successful and was largely attended, and the Secretary believes that good results followed his visit. Advantage was taken of the visit to call upon the County Superintendent, Prof. Calvin Ochiltree, and arrange with him to later meet the trustees of the county and, if possible, effect an organization for health work in the schools. Prof. Ochiltree was very



much pleased to enter the work and agreed to call a meeting of the trustees on February 5th.

Connersville, February 5th.—In accordance with the arrangements made with Prof. Ochiltree on January 25th, I visited Connersville and met the trustees of the county whom he had kindly called together. School hygiene was fully considered in general conference and the following work was recommended to the Trustees:

That they should, as soon as possible, put all their schoolhouses in first-class sanitary condition. Windows were to be fixed so that they could be raised and lowered for purposes of ventilation. Doors were to be properly fitted and valve ventilators put into outside doors where transoms did not exist. Schoolrooms heated with stoves were to have jackets placed around the stoves, and teachers were to be instructed in thorough ventilation. It was agreed that trustees would order their teachers in cold weather to watch the students carefully, and if any of them should show sleepiness or heaviness, work would stop, and windows would be raised and the students marched around the room or given arm exercises while the air was being changed. It was also agreed that the water supplies would be looked after very carefully and that water buckets and tin cups would be entirely banished. Each trustee was asked to supply the address of his teachers to the State Board of Health, and there would be sent to them one of the envelope packages containing circulars upon the prevention of various diseases. The teachers were to inform themselves in regard to the contents of said circulars and at appropriate times teach from them to their pupils. Every one of the trustees expressed himself as highly pleased with the ideas advanced and all promised to do the very best they possibly could for the health of the school children under their charge.

Evansville, March 25th.—On this date I visited Evansville in order to deliver a public lecture upon the work of the State Board of Health and general hygiene. The visit was made upon invitation of the Mayor and the Monday Club. A large audience was in attendance which entirely filled and crowded the floors and gallery of Grace Methodist Church. The lecture was well received and a vote of thanks was passed. I believe much good will result from this visit.

A notable event concerning hygiene in the State occurred in Indianapolis during the week commencing March 5th. This was the Indiana Tuberculosis Exhibition, held in Tomlinson Hall.

The exhibition was essentially the same as was presented at New York, Philadelphia, Boston and Newark. It came direct from Newark to Indianapolis and from here it went to Chicago. The exhibit was under the direction of the Indianapolis Board of Health and the Indiana State Board of Health and was open every day and evening for one week. The program was as follows:

#### **EVENING PROGRAM.**

**Opening Exercises, Monday, March 5th, 8 p. m.**

Governor J. Frank Hanly, presiding.

The exhibition was formally opened by Hon. Charles A. Bookwalter, mayor of Indianapolis.

Address, Mr. Chas. R. Williams, editor of the Indianapolis News.

**Tuesday, March 6th, 8 p. m.**

Mr. John H. Holliday, presiding.

Address, "Sociological Importance of Tuberculosis," Dr. John W. McCaskey, Fort Wayne.

**Wednesday, March 7th, 8 p. m.**

Hon. John W. Kern, presiding.

Address, "The Hospital and the Sanatorium a Necessity in the Combat Against Tuberculosis," Dr. Hugh A. Cowing, Muncie, Ind.

**Thursday, March 8th, 8 p. m.**

Mr. Andrew M. Sweeney, president State Life Insurance Co., presiding.

Address, "The Open Air Treatment of Consumption," Dr. J. W. Pettit, Ottawa, Ill., director of the Ottawa tent colony.

**Friday, March 9th, 8 p. m.**

Hon. Charles Henry, presiding.

Address, "What Well People Should Know About Tuberculosis," Dr. Geo. T. McCoy, Columbus, Ind.

**Saturday, March 10th, 8 p. m.**

Hon. Hugh T. Miller, Lieutenant-Governor, presiding.

Address, "Municipal Control of Tuberculosis," Dr. Arnold Klebs, Chicago.

Address, "The Promise of Victory Over Tuberculosis," Dr. Robert Babcock, Chicago.

## AFTERNOON PROGRAM.

## Twenty-Minute Talks.

Monday, March 5th, 4 p. m.

"What is Tuberculosis?" Dr. Frank B. Wynn, Indianapolis.

Tuesday, March 6th, 4 p. m.

"How to Make Home Safe Against Tuberculosis," Dr. J. C. Blossom, Mt. Summit, Ind.

Wednesday, March 7th, 4 p. m.

"Tuberculosis a House Disease; It is Infectious but not Contagious." Dr. R. H. Ritter, Indianapolis.

Thursday, March 8th, 4 p. m.

"What I Saw at a Tuberculosis Sanatorium," Dr. Wm. George, Indianapolis.

Friday, March 9th, 4 p. m.

"The Sanatorium Treatment of Beginning Tuberculosis," Dr. Theo. Potter, Indianapolis.

Saturday, March 10th, 4 p. m.

"Tuberculosis Work of the Charity Organization," Dr. C. S. Grout, secretary, Indianapolis.

The total attendance was 5,128. All lectures were well attended. On Saturday night, when Dr. Klebs and Dr. Babcock spoke, and Lieutenant-Governor Miller presided, it was necessary to move some of the exhibit and place additional chairs to seat those in attendance. Ten thousand circulars concerning the prevention of tuberculosis were distributed. During the week the Indianapolis News printed two editorials upon the subject of preventing tuberculosis and gave daily illustrated accounts of the exhibit. Other papers gave good descriptions and abstracts of the addresses.

Through the influence of Mayor Bookwalter, whose heart and actions are in all good works, the City Hall was secured without rent. The forces of the city and the State Boards of Health unpacked and displayed the exhibit, a work which engaged ten men for twenty hours. The printing was given without charge by two large printing concerns, and the expenses—freight, hauling frames, burlap, expenses of speakers, etc., amounting in all to \$225—were paid from subscribed funds.

The pathological exhibit from the Medical College of Indiana, the medical department of Purdue University, attracted wide attention.

As part of the Secretary's report there is given herewith reports of the bacteriologist and chemist.

# REPORT OF THE CHEMICAL LABORATORY FOR THE FIRST CALENDAR QUARTER OF 1906.

By H. E. Barnard.

I herewith submit a report of the work of the Chemical Department of the Laboratory of Hygiene since its establishment to date, together with an outline of proposed work for the coming summer and recommendations for desirable and necessary legislation.

Owing to the time spent in equipping the laboratory regular work was not begun until October, when inspectors were sent out and analytical investigations commenced. The laboratory has, therefore, been in active operation for six months. During that time we have analyzed 1,984 samples of food products and 541 of drugs. Of these analyses 2,177 have been reported in full in the November and January bulletins and need no further mention. In the last month we have examined 56 samples of molasses, 31 samples of honey, 40 miscellaneous food samples, 221 samples of drugs, such as sodium phosphate, sulphur, beeswax, etc. Of these unreported food samples 65 per cent. have been pure and 35 per cent. adulterated, and of the drug samples 38 per cent. have been pure and 62 per cent. adulterated. In passing I may observe that all the sulphur samples were adulterated, and that most of the beeswax was paraffin. So that to date the analytical work on foods and drugs has given us the following results:

Total number of samples examined.....	2,398
Total number of samples pure.....	995
Total number of samples adulterated.....	1,403
Percentage of adulteration.....	59.47

Much of our time has also been devoted to the sanitary analyses of waters, usually sent in by members of boards of health and health officers. We have examined 272 samples of water and have found 125 supplies polluted and unfit for drinking or domestic purposes. It is evident that the shallow dug well, supplied by surface water, is a menace to the health of the individual and the community. Of 113 shallow well waters analyzed 85, or 75.3 per cent., have been polluted by sewage. Many supplies were actually dangerous. Many others were evidently liable at any time to pass out of the safe class and become foci for the spread of water borne diseases. The driven or deep wells are a much safer source of supply. Our results show that 43.4 per cent. of the wells examined have been contaminated, but the large percentage of polluted supplies is in a great measure due to the fact that well owners call all bored or driven wells deep wells, when the results of our analyses indicate that they really should be classed as shallow or surface water wells.

The salary list of the laboratory for the last six months approximates \$2,100. The normal running expenses are not over \$100 a month. If, by reason of abnormally heavy expenses during the month of October incident to the collecting of 4,000 samples of food products, we set the total expense of the laboratory since it was opened for work at \$3,000,  $\frac{1}{2}$  of which has been used in the water laboratory, we find that the cost of collection and analysis of each food sample has been 80.6 cents and of each water sample \$3.68. If on the other hand we credit the laboratory with the regular fees for the analytical work done, the fees paid the chemists of the Ohio Food Commission for example, it appears that the laboratory has earned:

In 301 milk analyses at \$2 per sample.....	\$602
In 2,097 food and drug analyses at \$5.....	10,485
In 272 sanitary water analyses at \$10.....	2,720
<b>A total of.....</b>	<b>\$13,807</b>

A practical saving to the State over the cost of operation of \$10,807.

**Outline of Proposed Work.**—We have still on hand about two hundred samples of food products collected last fall. These samples will be analyzed and the results reported in an early bulletin. We have on hand several hundred samples of drugs, chiefly tinctures, which are now in process of analysis. We also have before us the examinations of more than 200 samples of patent and proprietary medicine, such as blood remedies, catarrh and cough cures, toilet preparations, etc.

This work will soon be completed, and it will then be necessary to collect other samples. The present laboratory force can not afford to leave their analytical work to act as inspectors for more than brief periods, and it will be advisable that a deputy food and drug inspector be employed throughout the summer months. One of the most important branches of food inspection is that of dairy products. And beginning with the month of May we should endeavor to secure from cities and towns samples of milk for analysis. We shall have to rely upon local aid for making the collections, and we have already received assurances of assistance from several health officers. Unfortunately there is no adequate law now on the statutes by which we can punish the sellers of illegal milk, and we shall be forced to conduct prosecutions in local courts under local ordinances.

Many analyses of butters have shown that much oleomargarine is being sold as butter throughout the State, and investigation shows that no attention is paid by restaurant keepers and dealers to displaying the signs "Oleomargarine used or sold here." I find that there is on the statutes a law passed in 1882 which is amply sufficient to control the situation if it can be applied. There is some question as to its present legality, however, and I suggest that it be tested in court, that if necessary it may be amended so as to be operative.

I think it advisable to make a special study of the quality of the soft drinks so largely consumed in the summer months. Their composition is at least uncertain, and I believe in many cases of positive injury to the consumer.

The condition of the public and private water supplies is deplorable. While it may never be possible to eradicate completely the filthy disease producing family wells so situated as to be a cesspool for effluents from the barnyard and sink drains and privy, careful systematic inspection of public supplies is possible, and should be made in the future for the purpose of finding out the condition of the water systems. I have collected from every large town and city statistics of their public water supply, giving source, system of operation, per capita consumption and number of persons supplied. During the summer we should analyze as many of the public supplies as possible and arrange to make systematic inspections several times each year. For the isolated farmhouse well a chemical analysis is usually quite sufficient to determine the quality of the supply, but in order to arrive at a correct valuation of the purity of a public system operated perhaps under changing conditions both the chemical and the bacteriological analyses must be made.

It must be remembered that as the work of the laboratory becomes known throughout the State an increasing number of miscellaneous samples of foods, drugs and water is constantly coming in for analysis, and therefore due consideration must be given this routine work, which, while perhaps not of special importance to the public at large, is frequently of great value in impressing the worth of the laboratory upon individual citizens whose support we desire.

**Suggestions for New Legislation.**—The present pure food law, while admirable in its general plan, is wholly useless as a means of bringing violators of the provisions of the law to justice. This is due to the fact that the penalty clause of the law was evidently "written in" by interests opposed to the bill, so that at present offenders must "knowingly sell" "articles injurious to health," thus making it necessary for the board to prove not only knowledge on the part of the seller but also the injurious composition of the goods. The bill should be simply amended so that the penalty clause will read in effect:

"All persons violating the provisions of this act shall be for the first offense subject to a fine of \$10 and costs; for the second offense subject to a fine of \$50 and costs; for the third offense subject to a fine of \$100 and costs, and three months in jail."

A specific milk law is absolutely necessary. Last fall I endeavored in two cases to secure conviction of persons guilty of selling preserved and watered milk. At Jeffersonville the grand jury refused to indict because it was so evident the offenders could not be convicted under the law, and at Terre Haute the justice of the peace before whom a case of watering was brought released the offenders because it was impossible to prove the vendor knew the milk to be adulterated. The loss of these two cases, one tried under the general food law and the other under the specific milk law, proved how futile it was to attempt to convict an offender under the present food statutes.

At the present time the supervision of the State Board of Health over public water supplies is limited and productive of small results. With a water laboratory at its disposal the board should be given control of all public supplies. If a law which has been in successful operation in Massachusetts for some years could be enacted, giving the supervision

of all public waters to the board, with authority to grant improvements and extensions after due examination of the conditions, not only would the quality of the present supplies be improved but waste of money and endangered health would be prevented.

The disposal of sewage, household and manufacturing wastes is also a problem capable of being efficiently attacked by means of the laboratory, and prompt measures are necessary if we are to conserve the purity of the streams and ponds which are the natural source of water supply.

While I realize the limitations placed upon the board in the matter of increasing the salary of the chemist, because the amount to be paid is fixed by statutes, yet I venture to suggest to you for your consideration the following facts:

First—\$1,500 per year is wholly inadequate compensation for the services required of your chemist.

Second—He is in charge of two laboratories, food and water, as either department is sufficient to command his undivided attention. The Board of Health of Massachusetts employs two chemists as heads of their food and water laboratories, paying each of them \$2,800 per year.

Third—He accepted this position with your board with full knowledge of present conditions, yet to do so refused a position as head of the government import laboratories at \$2,000 per year, for he received the assurance of your secretary that he would strive to have the salary increased at the earliest opportunity, and had faith that the board would be able to secure the necessary legislation.

The work required of the Laboratory of Hygiene is bound to increase rapidly as its availability and value become known, and the expense of operation will thereby become greater. As already suggested, food inspectors are necessary. A food law without inspectors to see that it is enforced is bound to become crippled and to lose its value. While I do not believe in a corps of deputies, I do think that we should have at least one competent man on the road all the time and the funds available for another if he is needed. We also must have funds to conduct prosecutions, for we can not always rely on local prosecutors to convict offenders. It is evident that more money is needed for the successful operation of the laboratory if it is to attain to its fullest usefulness, and I beg to suggest that an increased appropriation of \$5,000 be asked of the incoming legislature.

## REPORT OF THE BACTERIOLOGICAL LABORATORY FOR THE FIRST CALENDAR QUARTER OF 1906.

By T. Victor Keene.

The Bacteriological Laboratory was put into commission January 1, 1906, although much work had been done previous to the formal opening of the laboratory. Since the laboratory has been opened a great deal of our time and energy has been spent in devising a systematic method of keeping a record of the work done, as well as devising methods of technique.

Method of Keeping Records.—It was early seen that it would be necessary to devise some method of keeping the records so that they

could be readily referred to. All the records are now kept as follows: We have one card containing a full history of the case. This history card gives the clinical history of the case and the record of when the specimen was sent to the laboratory, when it was received, when the report was mailed, and of course the results of the finding. This one card contains full information regarding the case. These cards are kept in consecutive order, each card being given a number. It is very obvious that the persons most liable to refer to this record are the physician in the case and the patient, so we have a cross-index system containing the name of the patient, the nature of the specimen, result of the examination and the file number of the card giving the complete history. This file by patients is kept alphabetically. Each physician of the State who submits for examination a specimen of any variety is given a separate card in our index file of physicians, and on this card we have a record of the date on which we made the examination for him for typhoid fever, diphtheria or tuberculosis. This card also refers back to the card containing the complete history of the case. The index to the physicians and patients is alphabetically arranged.

As a further aid in completing our cross-index we have a set of cards giving the name of both the physician and the patient, arranged by counties, so that at any time we can refer to any individual county and in a few seconds know just how much work and what variety of work the laboratory has done for any particular section of the State. This method of keeping the records is an original one. The idea of course is the card system in common use in many lines of business. These records are referred to much oftener than would be supposed. We have on a few occasions had physicians complain that reports had not been sent to them. Reference to the record shows at once the exact date the report was made. We have on two occasions had physicians allege that examinations made in our laboratory gave certain findings, while examinations made by other physicians gave entirely different findings. Referring to our record we are able at a glance to tell just exactly what our findings had been, and in both cases they were exactly similar to the findings reported by other physicians.

Letter to Medical Societies.—It has been very obvious for some time that the physicians throughout the State at large did not know about the laboratory. While the health officers of the State have been informed regarding the same, it seemed to us that they had failed to inform the physicians of their respective communities regarding the laboratory, as it was an almost daily occurrence for physicians from various parts of the State visiting Indianapolis to drop into the laboratory and express great surprise at the existence of the same. Various means of acquainting the profession of the existence of the laboratory, its scope of work, etc., were discussed, and it was finally decided to address a letter to the secretary of every medical society of the State apprising them of the fact that the laboratory was now ready to receive specimens and advising them how to ship the same, etc. We further asked the secretary to bring up the matter before the society and extend to the society an invitation to submit specimens to the laboratory. We have received answers from nearly half of the letters sent out, and nearly all the answers received seemed to show



that the writer had not been aware of the existence of this laboratory. However, this work will reach only a small percentage of the physicians in the State, and I would respectfully recommend that the board authorize the issuing and sending out of a letter to every physician of the State apprising him of the existence of the laboratory and inviting him to send in specimens. The cost of such a letter need not be great. I feel certain that the expenditure would be justified, and that it will greatly increase the amount of service we would render the public.

**Organization of Laboratory Proper.**—There are a great many solutions, reagents, stains and varieties of culture media which have to be made up in the laboratory. We have practically spent the greater part of the time since the first of the year in getting our laboratory stocked with these things.

We have on hand at this time twelve liters of Ziehl Neilson's Carbol-fuschin, eight litres of Gabbet's Sulphuric Acid decolorizing solution, three litres of Loeffler's Methylene Blue Solution, one litre of Wright's Blood Stain; six litres of Delafield's Haemotoxylin Solution, one litre of Eosin, and numerous other stains in smaller quantities. These stains, which we have made up in such large quantities, are stains which improve as they become older, and it is always a matter of great convenience to a laboratory to have old stains to use, as they are much more reliable and certain in their results. We have the stains made up to do practically any variety of bacteriological and pathological work, although, of course, we do not have the stains made which deteriorate when in solution. In addition to the stains we have made up and ready for immediate use the various hardening and fixing solutions used for the preserving of tissues, including the Kaiserling solution for the preservation of gross pathological specimens. We are from time to time, as opportunity offers, adding or collecting interesting pathological specimens, and while we may not be able to make much of a show at this year's meeting of the Indiana State Medical Society, it is our ambition to each year have an interesting exhibit before the State Medical Society from the Laboratory of Hygiene of the State Board.

We have made up a large variety of culture media, including the various sugar broths, gelatines and agars. While we fully realize that for the time being at least research work in the laboratory must be made secondary to the routine work, we have, however, been doing such as our time would allow. Practically all the research work we have done has been along the lines of culture media.

**Diphtheria Serum.**—The manufacture of blood serum for diphtheria diagnosis is a difficult proposition, as the media dries up rapidly and tends to become contaminated very easily. Within the last few months Westbrook, superintendent of the Laboratory of Hygiene of the Minnesota Board of Health, published a paper advocating the use of a small amount of glycerine in the blood serum, claiming for it that such serum did not dry out so rapidly, and that the presence of the glycerine would prevent the growth of certain varieties of bacteria. This was in keeping with a well-known fact that vaccine virus if marketed in glycerine did not tend to become contaminated, as the glycerine was sufficiently antiseptic to destroy large numbers of bacteria. Westbrook further claimed that the

diphtheria bacillus was not affected by glycerine, but grew readily. It is very obvious that if his claims were warranted the glycerine serum would be much better than serum without it, so we have been experimenting with blood serum with various percentages of glycerine in it, and have found that blood serum containing 5 per cent. glycerine makes an admirable culture media for diphtheria bacilli. We expect to use this glycerine serum instead of the plain serum hereafter, as it is superior to plain serum.

**Typhoid Fever.**—Conrade, in the *Deut. Med. Woch.*, January 11, 1906, published a paper on the result of some observations he had been making on the early isolation of typhoid bacteria from the blood of typhoid patients. It is a well-known fact that in practically all cases of typhoid fever by the time the individual sickens with the disease the typhoid bacteria are in the blood. It is further well known that there are several features which make its isolation very difficult, the most prominent of which is the fact that shed blood is about ten times as germicidal as blood in the blood vessels, due to the coagulation of the blood and the breaking down of the white blood cells into nucleic acid. Conrade's work was as follows: He drew blood from patients into a sterile pipette, in which was a small amount of a 5 per cent. solution of ox bile, the object of the ox bile being to prevent coagulation of the blood. This blood was then put in a culture media in a broth of special formula, and the typhoid bacteria grew readily in most cases. It at once occurred to us that this could be utilized in a practical way in a public health laboratory, and we are at present working on the following hypothesis:

We know absolutely that we can get typhoid bacteria from the blood the first or second day. We know further that it is only a matter of a few hours before they have grown in sufficient numbers in the tube that we can see the actively motile bacteria under the microscope. The identity of the typhoid bacteria can be established by discovering a motile organism present, and subjecting this motile organism to the action of a typhoid bacteria it will agglutinate; if it is not the typhoid organism it will not agglutinate, so the plan we have in mind for utilizing these observations in this laboratory was as follows:

We would put out an outfit composed of a small sterile pipette, sealed at both ends and having in its bulb some of the ox bile solution. The physician would be instructed to break off both ends of the pipette, which would of course allow the bile solution to flow out, but a sufficient amount would adhere to the walls to prevent the blood from coagulating. He would then draw his blood under aseptic precautions and inoculate a tube of media of the variety needed. This he would ship to us and we would incubate it, and at the end of twelve hours examine the culture to determine whether or not there were any motile organisms present. If there were any motile organisms present we would test the organism with a known typhoid serum, and if the same agglutinated we would be certain that the organism was a typhoid organism. The difficulty in the way of making the test lies in the fact that the postal regulations do not allow the shipping of liquid media, so it is necessary to devise some variety of solid media which would work. We have spent a great deal of time working with various modifications of gelatine and agar, all of

which we have found unsatisfactory. We are at this time working on a culture media the solid part of which will be composed of a low melting paraffin, the idea being that this being a solid media it will conform with the requirements of the government in regard to shipping, but being a low melting paraffin it will at once become a fluid media when put into the incubator. The practical advantage of this work, if after experimentation it is found to be as practical as it seems to be in theory, we will be able to arrive at a diagnosis of typhoid fever at the very beginning of the disease, as early as the first or second day; whereas with the Widal Reaction, which we at present use, and which is in common use in public health laboratories, we are only able to arrive at a diagnosis not earlier than the fifth day, and usually about the seventh or eighth day.

Below is subtended a statistical table of the amount of work done in the laboratory since the first of the year per county:

## TUBERCULOSIS.

<i>County.</i>	<i>No.</i>	<i>County.</i>	<i>No.</i>
Adams .....	3	Kosciusko .....	5
Allen .....	3	Lagrange .....	6
Bartholomew .....	3	Laporte .....	13
Benton .....	6	Madison .....	12
Blackford .....	5	Marion .....	76
Boone .....	3	Martin .....	1
Carroll .....	3	Miami .....	5
Cass .....	1	Montgomery .....	6
Clay .....	4	Morgan .....	2
Clinton .....	15	Noble .....	5
Crawford .....	5	Owen .....	2
Davless .....	3	Parke .....	7
Decatur .....	8	Perry .....	4
Dekalb .....	1	Pike .....	1
Delaware .....	3	Posey .....	12
Elkhart .....	6	Putnam .....	1
Fayette .....	1	Randolph .....	1
Fountain .....	9	Ripley .....	6
Franklin .....	3	Rush .....	3
Grant .....	4	Shelby .....	2
Hamilton .....	11	Spencer .....	1
Hancock .....	7	St. Joseph .....	2
Harrison .....	1	Sullivan .....	4
Hendricks .....	15	Tippecanoe .....	3
Henry .....	14	Tipton .....	4
Howard .....	2	Union .....	5
Huntington .....	5	Vermillion .....	6
Jackson .....	2	Vigo .....	7
Jay .....	2	Wabash .....	3
Jefferson .....	4	Wayne .....	27
Jennings .....	1	Wells .....	5
Johnson .....	2	Whitley .....	2
Knox .....	11	White .....	2

## DIPHTHERIA.

<i>County.</i>	<i>No.</i>	<i>County.</i>	<i>No.</i>
Allen .....	9	Marion .....	14
Blackford .....	1	Marshall .....	2
Carroll .....	1	Montgomery .....	1
Franklin .....	1	Rush .....	3
Hamilton .....	4	Spencer .....	1
Hendricks .....	3	Tippecanoe .....	1
Huntington .....	1	Tipton .....	1
Jasper .....	4	Vermillion .....	2
Jefferson .....	4	Vigo .....	1
Laporte .....	6	Wabash .....	1
Madison .....	1	Wayne .....	6

## TYPHOID.

<i>County.</i>	<i>No.</i>	<i>County.</i>	<i>No.</i>
Clinton .....	3	Laporte .....	5
Elkhart .....	1	Marion .....	9
Fountain .....	3	Posey .....	1
Hamilton .....	1	Vigo .....	9
Jennings .....	1	Wayne .....	16

The following circular letter from Surgeon-General Wyman was presented for action:

March 15, 1906.

J. N. Hurty, M. D., Phar. D., Secretary State Board of Health, Indianapolis, Ind.:

Sir—In accordance with the provisions of section 7, act of Congress approved July 1, 1902, I have to inform you that the Fourth Annual Conference of State and Territorial Boards of Health with the Public Health and Marine Hospital Service will be held at the New Willard Hotel, Washington, D. C., on Wednesday, May 23, 1906, at 10 o'clock a. m.

Your board will be entitled to representation in the said conference by one delegate. It is requested that your board will submit a type-written report of any State or municipal health legislation enacted during the past year in relation to public health, sanitation or kindred subjects. This report will be for publication in the transactions and will not be read at the meeting.

A program of the subjects to be discussed will be announced in a subsequent communication.

I would request that I be informed in advance of the name of the delegate who will represent your Board.

Respectfully,

WALTER WYMAN,  
Surgeon-General.  
J. W. K.

After consideration it was ordered that the Secretary should be the delegate to represent the Board at the said Conference.

Ordered, That an annual health officers' school be held each year the last Thursday and Friday of June, and the Secretary to prepare programs.

Ordered, That Drs. Tucker and McCoy represent the Board as delegates to the annual meeting of the National Association for the Study and Prevention of Tuberculosis, which would be held May 17th, 18th and 19th in Washington, D. C.

Ordered, That copies of the following circular be sent to the presidents of all county medical societies:

#### CIRCULAR.

Dear Doctor—It will be appreciated if you will call the attention of your Society to the fact that the Bacteriological Department of the Laboratory of Hygiene, of the State Board of Health, is in good working order and ready to receive specimens for examination. We have already received a great many specimens for examination from various parts of the State, but we have not received as many from your locality as we expected to receive.

There is enclosed herewith a circular of directions as to the manner of shipping specimens. We are permitted by law to undertake only such work as is related to public health, and to this end we examine sputa submitted for examination for tubercle bacilli; samples of blood from suspected typhoid fever patients for the Widal Reaction, and cultures made from sore throats, suspected to be cases of diphtheria.

We are prepared also to undertake practically any laboratory examination that might be desired by the physician, provided, of course, the same is a matter of public health administration. We will examine urine for tubercle bacilli, although we do not make a chemical examination of urine nor examine for any other elements than tubercle bacilli. We will mail to any physician, requesting the same, a full set of outfits for the collection and shipping of specimens intended for examination to the laboratory. We shall be glad to send you an equipment of the same, should you desire it.

We hope to make the Laboratory a power for good in the State, and are desirous that the physicians of your Society and section of the State become as interested and use the Laboratory as freely as the physicians of other sections of the State have already done.

#### SPECIAL MEETING.

May 18, 1906.

Special meeting called to consider the sanitary surveys of certain schoolhouses and to take proper action.

Called to order by the President at 2 p. m.

Present: Drs. Davis, Wishard, Tucker and Hurty.

Sanitary surveys of the schoolhouses at West Newton and Valley Mills read as follows:

**SANITARY SURVEY OF SCHOOLHOUSE AT WEST NEWTON, DECATUR TOWNSHIP, MARION COUNTY.**

By J. N. Hurty.

In response to an invitation of the Trustee, Mr. J. D. Sanders, and several patrons of the school, the State Health Officer made an inspection of the schoolhouse at West Newton, April 23, 1906. This schoolhouse is known as West Newton School No. 3.

**Site.**—The site comprises about two acres. It is high and rolling and well drained. It is in every way satisfactory.

**The Building.**—The building is frame, built in 1876. There are three rooms above and three below; no basement; narrow box winding stairway, heated by Ideal Heaters, which are not satisfactory. There are two fire escapes on the building. The foundation is brick and somewhat washed by water, but not dangerous, nor could it be termed bad. The steps are in bad repair; the floors are worn and very poor, yet the building can not be said to be dilapidated.

**First Floor.**—The building is entered by a vestibule facing the west. From the vestibule a narrow winding stairway leads to the upper story. Two doors open from the vestibule, one into the primary room and one into the room for the Sixth and Seventh Grades.

**Primary Room.**—It is 24x30x12, total 8,640 cubic feet, furnishing space for forty children. There are 41 seats; enrollment 41, average daily attendance 32. The light is admitted from three sides and the teacher is compelled to look into the light. Considerable space in this room is occupied by the Ideal Heater. Blackboards glossy and teachers complain of this.

**Sixth and Seventh Grade Rooms.**—This room is 24x30x12, total 8,640 cubic feet. Enrollment 26; average attendance 22. Floors worn, glossy blackboards. Much space in this room is occupied by the large Ideal Heater. It is lighted from three sides and the teacher is compelled to look into the light.

**Third, Fourth and Fifth Grade Rooms.**—This room was built on to the main building some time after first construction. It is entered by a vestibule built inside the room. The said vestibule is used as a cloak room. The room is 30x30x12, which is 9,600 cubic feet, supplying space for 48 pupils. There are 50 seats, enrollment 46, average attendance 40. Glossy blackboards, floors worn, considerable space occupied by the large Ideal Heater. The light is admitted from three sides, and the teacher is compelled to look into the light.

**Second Floor.**—Second floor is reached by a winding narrow box stairway, which opens into a vestibule. Vestibule is lighted by two windows and is used for a cloak room. One room opens into a narrow

hall, which has been created by building a partition through a room which is immediately above the primary room. The room partitioned off as described is used for a laboratory, is lighted from three sides, floors are worn, blackboards glossy, and is heated by the Ideal Heater in the room below.

**Eighth Grade Room.**—This is the high school room and it is 30x30x12, which makes 9,600 cubic feet, space for 48 pupils; enrollment 52, and average daily attendance not given. The room is lighted from three sides. Glossy blackboards, floors worn, heated by the heater in the room below. Teacher faces light.

**Third and Fourth Grade Room.**—This room is the second story of the addition which has before been described. It is 30x30x12, making 9,600 cubic feet, furnishing room for 48 pupils. It contains 50 seats; glossy blackboards; lighted from three sides; the floors are worn. The teacher is compelled to look into the light. Warmed by the Ideal Heater in the room below.

**Remarks.**—Whooping cough prevailed in the school towards spring, but no epidemic diseases. Coughs, colds and catarrhs prevalent every winter.

**Opinion and Recommendations.**—It is very plain that this schoolhouse is not sanitary. On account of defective lighting the eyes of both teachers and pupils are being injured, and on account of defective heating and ventilation their general health is being injured. It is very apparent that the building can not be repaired so as to make it sanitary, and I therefore recommend its condemnation.

After consideration of the above survey, and after hearing arguments from patrons for and against condemnation, which arguments were duly considered, the following order of condemnation was unanimously passed:

#### PROCLAMATION OF CONDEMNATION OF THE SCHOOLHOUSE AT WEST NEWTON, MARION COUNTY, INDIANA.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at West Newton, Decatur Township, Marion County, Indiana, is unsanitary and unfit for school purposes; it is therefore

Ordered, That said schoolhouse is condemned and shall not be used for school purposes from this date, May 18, 1906, forward. And in the event of the trustee or any school teacher or any person violating this order of condemnation, then the Secretary of the State Board of Health shall duly inform the Attorney-General, who will bring prosecution as in the statutes provided.

#### REPORT OF SANITARY SURVEY OF VALLEY MILLS SCHOOL- HOUSE, MARION COUNTY, MAY 14.

**Site.**—The site is excellent in every way. It is high ground and surrounded with few trees.

**Building.**—The building is an old frame with a much worn foundation, holes are torn or broken in, and there are cracks in the foundation in several places. The building is one story. The plaster is off in places and there are cracks in the ceiling and walls.

**Eighth Grade Room.**—This room is 24x32x14 feet, making the cubic contents 10,752 feet. This supplies space sufficient for 51 pupils. The enrollment is —, and the attendance is —. The light is introduced from two sides. On the west side there are four windows and on the south there are two windows. The teacher is compelled to look into the light. Each window has eight glass lights, 12x18 inches, making the total glass area for the whole room of 72 square feet. The required amount would be 128 square feet. The room is therefore not properly lighted. The blackboards are glossy and chipped in places. The room is heated by a stove and there are no ventilating shafts.

**Primary Room.**—This room is 24x24x14, making in all 6,064 cubic feet, furnishing space for 30 pupils. The enrollment is —, the attendance is —. The arrangement is such as to compel the teacher to look into the light. The room is heated by a stove. There are no ventilating shafts. The floor is bad.

**Outhouses.**—These are well separated and are in passable condition.

**Water Supply.**—The water is carried from a well at a farmhouse, about one-eighth of a mile distant. The well at the schoolhouse furnishes water which is impure and is not liked by the children.

**Opinion and Recommendations.**—It is my opinion that this schoolhouse is unsanitary in every particular and unfit for school purposes. I recommend that the same be condemned.

After consideration of the above survey, and after hearing arguments from patrons for and against condemnation, which arguments were duly considered, the following order of condemnation was unanimously adopted.

#### PROCLAMATION OF CONDEMNATION OF THE SCHOOLHOUSE AT VALLEY MILLS, DECATUR TOWNSHIP, MARION COUNTY, INDIANA.

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Valley Mills, Decatur Township, Marion County, Indiana, is unsanitary and unfit for school purposes, therefore it is

Ordered, That said schoolhouse is condemned for school purposes and shall not be used for said purposes from and after this date, May 18, 1906, and in the event of the trustee or any school teacher or other person using the said schoolhouse for school purposes, then the Secretary of the Indiana State Board of Health shall duly inform the Attorney-General, who will bring prosecution as in the statutes provided.

Passed by the Indiana State Board of Health in special session,  
May 18, 1906.



Documents concerning the schoolhouse at Monument City, Polk Township, Huntington County, were read as follows:

MONUMENT CITY, HUNTINGTON COUNTY.

Monument City, Ind., 1906.

To the State Board of Health:

We, the undersigned, residents and patrons of School District No. 7, in Polk Township, Huntington County, Indiana, respectfully request that you make an examination of the school building in said district as to its fitness for school purposes, and that you make known its condition to the Trustee of said Township.

Geo. C. King, John Ammerman, Mathias Chrisman, Homer Dillin, David M. Prilaman, Joseph Forest, S. J. Ellis, John A. Ellis, Seth Davis, S. J. Fair, Monroe Bailey, Stephen Weeks, J. F. Vickery, C. E. Hefner.

REPORT OF SANITARY SURVEY OF SCHOOLHOUSE AT MONUMENT CITY, HUNTINGTON COUNTY, POLK TOWNSHIP.

Survey Made May 10, 1906, by J. N. Hurty, Secretary.

**Site.**—The schoolyard covers about one acre and is well situated. The ground is high, gravel is found a short distance beneath the surface and the natural drainage is excellent; so good, indeed, as not to require tilling.

**Building.**—The building is brick with a stone foundation; no basement, two stories, two rooms, built about twenty-five years ago. The walls are sound; no cracks. The entrance is by one front door, which opens into a small vestibule lighted by one window. No provision for warming vestibule.

**Primary Room.**—The primary room is on the first floor and is entered through a door from the vestibule. It is 36x24x12 feet, which makes 9,504 cubic feet, furnishing space for 47 pupils. The room contains 52 desks, enrollment 43, average attendance 40. The desks are of the old wooden variety, yet are of good condition. Wraps are hung on hooks which are attached to the east wall of the room. The floor is in bad repair. Light enters by six windows, three on each side. Each window contains eight panes of glass, 12x18 inches. This does not furnish enough light, for the total number of square feet amounts to 72, and if the rule of one-sixth of floor area should be in glass is followed there should be 192 square feet. In other words, there is not quite one-half as much light as sanitary science demands. The blackboards are slate and the room is warmed by a stove. There are no ventilating shafts.

**High School.**—The high school room is on the second floor and is reached by a narrow stairway of twenty steps, in which there is one turn. This stairway is not of the variety known as "box stairway," but is, nevertheless, such in a general way, because it is so narrow and so confined in a small vestibule. If this schoolhouse were ever to catch on fire there would certainly be a pile of corpses to count in and upon the

stairway. This schoolroom is 36x22x10, making 7,920 cubic feet, which space is sufficient for 39 pupils. There are 40 seats, enrollment is 29, and average attendance 27. Floors are worn; no ventilating shafts; blackboards are slate. The room is lighted by six windows, three on each side. Each window pane is 12x18 inches, eight in each window, making 72 square feet of lighting surface. The sanitary requirements for lighting surface for this room would be 192 square feet. The room is heated by a stove.

**The Water.**—The water is supplied from a drilled well, which the trustee said was 110 feet deep. From this it is fair to presume the water is potable.

**Outhouses.**—The two outhouses are ordinary frame and are widely separated.

**Sickness.**—The testimony was to the effect that no epidemics had prevailed among the school children within the last few years; but, as would be expected, coughs, colds, and acute catarrhs were all frequently reported.

**Recommendations.**—As the above report, measurements and all considerations show this schoolhouse to be unsanitary and not up to standards, I therefore recommend its condemnation.

After due consideration the following order of condemnation was unanimously adopted:

**PROCLAMATION OF CONDEMNATION OF THE SCHOOLHOUSE AT  
MONUMENT CITY, POLK TOWNSHIP,  
HUNTINGTON COUNTY.**

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Monument City, Polk Township, Huntington County, Indiana, is unsanitary and unfit for school purposes; therefore, it is

Ordered, That said schoolhouse is condemned for school purposes and shall not be used for said purposes from and after this date, May 18, 1906. And in the event of the trustee or any school teacher or other person using the said schoolhouse for school purposes then the Secretary of the Indiana State Board of Health shall duly inform the Attorney-General, who will bring prosecution as in the statutes provided.

**REPORT OF SANITARY SURVEY OF SCHOOLHOUSE AT ROCK  
CREEK CENTER, ROCK CREEK TOWNSHIP,  
HUNTINGTON COUNTY.**

**Survey Made May 10, 1906, by Trustee W. D. Cline.**

**Site.**—The site is bad. It is low, wet and undrained, and can only be drained with difficulty.

**Building.**—The building is brick with stone foundation, built in 1890. It was originally a one-room building, but lately it had been made into two rooms by a rough board partition. The building is entered by a

vestibule provided with hooks for wraps. The vestibule is not warmed, and the schoolroom is warmed by stoves. There are large cracks at the angle formed by the ceiling and side walls. There is no basement.

**Primary Room.**—This room is 27x30x14 feet, making 11,340 cubic feet; this is only room for 56 pupils. There are 40 desks; enrollment —: attendance 27. The room is lighted by three windows on the west side and one on the north side. They are so situated as to admit light from the right side of the children. Each pane of glass is 8x22 inches, making 58 square feet. The floor area is 810 feet, and there should be one-sixth of this area in glass—this would require 135 square feet. The room, therefore, has only about one-half as much light as sanitary conditions require. The floor is in good condition. The desks are almost new and of several different sizes.

**High School Room.**—This room is 16x25x14, making 6,720 cubic feet, furnishing space for 34 pupils. There are 25 seats. The enrollment is —: attendance 20. The room is lighted by three windows, two on the east and one on the north; each window has twelve panes of glass, 12x22 inches, making in all 58 square feet of glass surface. The floor area is 264 square feet, and one-sixth of this, or 44 square feet of glass, is required. The lighting is therefore sufficient. The light falls from the left shoulder of the pupils. The blackboards are slate.

**Opinion and Recommendations.**—I am decided of the opinion that the site of this school building is damp and low and difficult to drain and should be condemned. The school building has no basement beneath. It is damp, hard to heat by stoves, has no ventilating ducts, the lighting of one room is insufficient, the vestibule is not heated and is an unfit place for wraps. I recommend that this building be condemned for school purposes.

After due consideration of the above survey, the following order of condemnation was unanimously adopted:

**PROCLAMATION OF CONDEMNATION OF THE SCHOOLHOUSE AT  
ROCK CREEK CENTER, ROCK CREEK TOWNSHIP,  
HUNTINGTON COUNTY.**

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Rock Creek Center, Rock Creek Township, Huntington County, Indiana, is unsanitary and unfit for school purposes; therefore it is

Ordered, That said schoolhouse is condemned for school purposes and shall not be used for said purposes from and after this date, May 18, 1906. And in the event of the trustee or any school teacher or other person using the said schoolhouse for school purposes, then the Secretary of the Indiana State Board of Health shall duly inform the Attorney-General, who will bring prosecution as in the statutes provided.

Passed by the Indiana State Board of Health in special session, May 18, 1906.

**SANITARY SURVEY OF SCHOOLHOUSE AT KENNARD, GREENSBORO TOWNSHIP, HENRY COUNTY.**

By Deputy E. H. Brubaker.

New Castle, Ind., May 4, 1906.

The building is a frame structure, which was originally one-story, consisting of three rooms and a hallway, with no basement. Then some years later the second story was added, making six rooms in all. The building is located on a lot of ample size and is reasonably well drained, with gravel walks leading up to the building from the street. The building is in a bad state of repair. On windy days the building can be felt to vibrate under the influence of the wind. On one extremely windy day the teacher felt alarmed, fearing that the building would collapse under the force of the wind. In one place the weather boarding is off, exposing the framework, which is decayed.

The blackboards are all slate and in good state of repair. The plastering is cracked and in some places is off. The rooms are all lighted by narrow windows and the north room on the ground floor is very dark, especially on cloudy days.

The rooms are all heated by stoves and on moderately cold days it is impossible to get any of the rooms warm enough, sometimes the temperature of the rooms is not above 60 degrees all day. This is especially true on windy days.

I was informed that there were many cases of colds and coughs, sore throats and pneumonia and allied ailments among the pupils and teachers, attributed to the cold and illy ventilated condition of the rooms. Many of the days the teachers and pupils wear their heavy wraps during school hours.

The stairs leading to the second floor are steep and dangerous, rising 14 feet in the same distance, and are protected by no railing. They are 9 feet wide. In all of the rooms the floors are in bad repair, with holes in same with boards and pieces of tin nailed over them.

In the lower rooms the wraps and the dumer palls or baskets are hung in the schoolrooms. Upstairs they are kept in the hall.

The desks and other fixtures are only in a fair state of repair.

The only means of ventilation is by windows.

The enrollment during the past winter was as follows: Primary room, 35; second room, grades two and three, 38; third room, grades three and four, 38; fourth room, 38; fifth room, 38; high school, 28; making a total of 215 pupils. The enrollment will show an increase for next winter. I was not able to learn the average attendance for last winter.

A large number of the patrons are complaining and are dissatisfied with the building.

The girls' outhouse is 112 feet north of the west wing of the building and the boys' outhouse the same distance north of the east wing of the school building. The two being about 100 feet apart.

The schoolhouse is in a very unsanitary and unsafe condition, the latter being enough to condemn it. I would recommend the condemnation of the schoolhouse for school purposes.

After due consideration of the above survey, the following proclamation of condemnation was unanimously adopted:

**PROCLAMATION OF CONDEMNATION OF THE SCHOOLHOUSE AT KENNARD, GREENSBORO TOWNSHIP, HENRY COUNTY.**

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Kennard, Greensboro Township, Henry County, Indiana, is unsanitary and unfit for school purposes; therefore it is

Ordered, That said schoolhouse is condemned for school purposes and shall not be used for such purposes from and after this date, May 18, 1906, and in the event of the trustee or any school teacher or other person using said schoolhouse for school purposes, then the Secretary of the Indiana State Board of Health shall inform the Attorney-General, who will bring prosecution as in the statutes provided.

Passed by the Indiana State Board of Health in special session, May 18, 1906.

**REPORT OF SECOND SANITARY SURVEY OF SCHOOLHOUSE AT AVON, WASHINGTON TOWNSHIP, HENDRICKS COUNTY.**

By J. N. Hurty.

E. E. Blair, Trustee.

In response to a petition from patrons, J. L. Anderson, Deputy State Health Officer, made a sanitary survey of the schoolhouse at Avon, February 1, 1906. Said survey was duly presented to the State Board of Health at a special meeting held March 7, 1906, and after due consideration of the evidence presented the schoolhouse was condemned.

Due notice of the complete proclamation of condemnation was duly posted on the schoolhouse and the trustee was formally notified by Dr. W. J. Hoadley, Health Officer of Hendricks County.

Now come Edward Mills, D. W. Carter, and C. D. Hollingsworth, composing the Advisory Board of Washington Township, Hendricks County, and present the following petition, which was received April 28, 1906:

"We, the undersigned citizens, taxpayers and patrons of School No. 6, in Washington Township, Hendricks County, State of Indiana, respectfully petition you to reconsider the action of your Honorable Board concerning the inspection of Schoolhouse No. 6, located at Avon, in said Washington Township, and for the purpose of reconsidering the matter we desire to call your attention to the following facts:

First. The building as it now stands was originally built as a two-story building and was not built as a one-story building and an additional story added thereto, as represented to you.

Second. The roof of said building is a good slate roof, and in good condition except in two places around flues.

Third. The floors of the various rooms are considerably worn, but these conditions could be remedied by reflooring.

Fourth. If the plan for heating the house is not sufficient we believe that it could be made sufficient without much expense.

Fifth. While the plastering is cracked in a few places, it is only where the leaks above referred to have damaged it, and it could be repaired with little expense.

Sixth. The outer walls of said building are apparently in as good condition as they were when first constructed. Upon careful examination we are unable to find any serious defects or cracks in the outside walls and only one small crack in the partition wall between the two lower rooms.

Seventh. There has been some drainage constructed for the schoolhouse lot, and if it is not sufficiently drained it will be a very easy matter to put in whatever amount of ditching is necessary to drain the same.

Eighth. The schoolhouse as it now stands is centrally located, and a good barn and sheds have been erected on the schoolhouse lot to accommodate the scholars and patrons of the school. Said buildings may not be entirely modern, but the same is well ventilated and lighted and if its sanitary conditions can be improved we will appreciate any suggestions you desire to make.

Ninth. As persons interested in having the right thing done we believe that this schoolhouse building is sufficient to accommodate the demands of the district in the township in which it is located, and that it can be put in the proper condition at very little expense. We also believe that it will be an unnecessary and useless burden to the taxpayers of the township to have the building torn down and a new one constructed.

We, therefore, ask you to consider the above facts and we ask you to make a careful investigation as to the true situation in regard to the sufficiency of the present building for school purposes."

D. W. CARTER.

EDWARD MILLS.

C. D. HOLLINGSWORTH.

• Advisory Board.

## SECOND SANITARY SURVEY OF SCHOOLHOUSE.

Upon Monday, April 30, 1906, State Health Officer made a second sanitary survey of the said schoolhouse as follows:

Site.—The schoolyard is about two acres in extent. One-third is low wet ground. Trustee E. E. Blair, upon being questioned, said that in the winter of 1905 and 1906 fully one-third of the schoolyard was covered with water for a period of many days. At one time it was necessary to wade through water two inches deep, with mud beneath, to get coal from the coalhouse immediately in the rear of the schoolhouse yard.

Mr. J. Langston, Principal, upon being questioned, said that in rainy weather the schoolhouse was very damp; the walls at times being so moist that the blackboards could not be used. At these times the atmosphere in the room felt damp.

The trolley line runs within 42 feet of the front door and the noise of the passing cars is bound to be detrimental to the school, as attention to books and recitations will be disturbed and confusion caused.

The water supply is from a dug well which is 18 feet deep and which is immediately in the center of the trolley track. The top of the well has been covered over with brick and the water piped to a pump 12 feet away. This well may become polluted at any time through the dropping of excreta upon the track from passing trolley cars.

**Conclusion.**—The site is unsanitary and unfit in every particular for a schoolhouse.

**Building.**—The building is brick with a brick foundation. No basement, two stories high, four rooms, built in 1884. Cracks were discovered to exist on all sides of the building. The roof is slate and although not waterproof at the present time, could easily be made waterproof. The building is heated by two Peck-Williamson Ideal Heaters. These heaters are in the lower rooms and take up a great deal of space. According to the plan of these heaters they receive cold air from the outside and after warming introduce it into the lower and upper rooms.

There is also an appliance by which these heaters are designed to remove the foul air from near the floor of each room. According to the testimony received from the trustee, teachers and pupils these heaters are not adequate and do not maintain a uniform or proper temperature and do not properly pump the foul air away. At this point I will say that if the heaters were satisfactory they would be the first ones of the kind that I have ever known which were.

A winding stairway, 4 feet wide with 23 steps, leads to the upper story. The outer edge of the stairway is protected by a strong banister and the entrances to the two rooms in the upper story are through two small doors, one on each side of a narrow vestibule. This constitutes a firetrap, and if the house should catch on fire while school is in session many lives would doubtless be lost upon this steep, winding, narrow stairway. If the schoolhouse is remodeled the stairway must be so constructed as to lessen to the fullest degree possible the danger from accident by fire.

The total enrollment during the last term was 135, with a daily average attendance of 104. This makes an average absence of 31, or 22.9 per cent. Much of this absence was caused by sickness, for coughs, colds, catarrhs, headaches, and rheumatism prevailed among the children. The children are reported as continually complaining of cold feet in cold weather.

A marked unsanitary feature of the present building is the fact that the cold damp halls is the only place for keeping wraps.

**Intermediate Room.**—On the first floor, 30x21½x12 feet, making 7,740 cubic feet in all. The room contains 38 seats, with 40 pupils enrolled, average daily attendance 26. The cubic space is sufficient. The floor is badly worn. Light falls over the right shoulders of the pupils. Blackboards are painted, but not glossy. Ceiling cracked in several places. Seats vary in size to fit pupils of different ages.

**Primary Room.**—On first floor, on west side, 30x21½x12, 7,740 cubic feet in all; 36 seats, 42 pupils enrolled, average daily attendance 32. There is an abundant cubic space for each pupil. Floor much worn. Blackboards painted, but not glossy. Ceiling much cracked. Seats vary in size to fit pupils of different ages.

**Grammar Room.**—This is the east room, in second story, 30x21½x14, making 9,030 cubic feet. The room contains 33 seats, 26 pupils enrolled, average attendance 24. There is ample cubic space for each pupil. The light falls over the right shoulders of the pupils. Blackboards painted, but not glossy. Ceiling is cracked. Floor much worn. Seats are proper size.

**High School Room.**—This is the west room in second story, 30x21½x14, making 9,030 cubic feet in all; 25 seats, 27 pupils enrolled, average attendance 22. Floor badly worn. Cracked ceiling. Blackboards painted, but not glossy. Light falls over left shoulders of pupils.

**History.**—There were four teachers in this building last year. The Principal, Mr. J. Langston, says the schoolhouse is very unsanitary. He asserts that the heating and ventilating are far from what they should be and that the almost continued dampness is a cause of rheumatic pains. One lady teacher last term quit on account of bad health after three and one-half months service. She claimed the unsanitary conditions of the schoolhouse caused her illness. The teacher who took her place taught five weeks, for she claimed her health was being injured by the unsanitary surroundings, namely, continued dampness, uneven warming and poor ventilation.

Trustee Blair reports that none of the four teachers will accept a position for the next year, although the patrons of the school especially request that they be employed again. The refusal of the teachers to teach in this school building is announced by them to be because of the unsanitary surroundings.

**Opinion and Recommendations.**—I am very confident that the schoolhouse at Avon is unsanitary. It is insufficiently ventilated and warmed, and in two of the rooms the light is introduced over the right shoulders of the pupils. It is also unsanitary because of its dampness and because of the cold damp halls where wraps are kept.

The water supply is not now polluted, but the well is in a dangerous situation, and may become polluted at any time, and this threatens a further unsanitary condition. The site has already been shown to be low and wet. It could be drained and filled at considerable expense.

I recommend that the former condemnation be not repealed and that it do stand.

In order to put this schoolhouse in good sanitary condition the grounds must be well drained and filled; a basement must be placed under the entire building, with foundation walls built of stone or vitrified brick or other impervious material. The said basement must have a cemented floor and an efficient heating and ventilating system must be supplied. Cloakrooms properly warmed, lighted and ventilated, must be constructed. As for the enrollment for next year, according to the estimate of the trustee, it will be 160, and so it is plain that an addition must be built to the present schoolhouse if it is remodeled, for there is not a square foot of space for more pupils in the present structure.

After due consideration of the arguments of a paid attorney and of citizens of the township, which were all duly weighed and considered, the former condemnation of this schoolhouse was unanimously reaffirmed.



**REPORT OF SANITARY SURVEY OF SCHOOLHOUSE AT KENT,  
REPUBLICAN TOWNSHIP, JEFFERSON COUNTY.**

Made April 17, 1906:

In accordance with request of County Superintendent and several patrons of the school, I made an inspection of the schoolhouse at Kent, Jefferson County, Indiana.

**Site.**—The site is not a good one. It is not high and dry and yet can not be said to be wet. The schoolyard is too small and it is impossible to add more ground on account of the residence district adjoining.

**Building.**—The building is an old dilapidated two-story frame structure, stone foundation. The plastering has fallen off in many places and cracks are frequent. There is no basement. Both rooms are heated by stoves and there are no ventilating shafts. The windows are broken and in a ramshackle condition. On standing in the center of the room and jumping up and down the walls of the building would shake. One floor has been placed on top of another until now there are three floors in the room. The rooms are lighted by three windows on each side. The light admitted is not sufficient. Both rooms are overcrowded and complaints are frequent. The report of the teacher shows that colds, coughs, and rheumatism are frequent. There have been no reports of diphtheria or other infectious diseases. The per cent. of attendance during last term was 90.

**Opinion and Recommendations.**—My opinion is that this schoolhouse is unsanitary and unsafe for school purposes and I therefore recommend its absolute condemnation, and the condemnation of the present site.

After due consideration of the above survey the following order of condemnation was unanimously adopted:

**PROCLAMATION OF CONDEMNATION OF THE SCHOOLHOUSE AT  
KENT, REPUBLICAN TOWNSHIP, JEFFERSON COUNTY.**

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Kent, Republican Township, Jefferson County, Indiana, is unsanitary and unfit for school purposes; therefore it is

Ordered, That said schoolhouse is condemned for school purposes and shall not be used for said purposes from and after this date, May 18, 1906, and in the event of the trustee or any school teacher or other person using said schoolhouse for school purposes, then the Secretary of the Indiana State Board of Health shall inform the Attorney-General, who will bring prosecution as in the statutes provided.

Passed by the Indiana State Board of Health in special session,  
May 18, 1906.

# **SANITARY SURVEYS OF SCHOOLHOUSES AT MADISON.**

By J. N. Hurty.

## **UPPER SEMINARY.**

Made April 18, 1906.

**Site.**—The site is a good one, but area is not quite sufficient.

**Building.**—The building is very old, having been built over sixty-five years ago. The front part of originally four rooms has been added to from time to time until now there are eight rooms, and their arrangement is such as to be a threat against life in case of fire or special alarm. The building is two stories, walls cracked and unsafe, no basement, worn floors, dangerous stairways, warmed by stoves, no ventilating shafts, not sufficiently or properly lighted. The facilities for the care of wraps are poor and unsanitary, and repulsive odors from the privies enter some of the rooms when windows are open. It is entirely unnecessary to make a detailed description of each room, for the whole building and every room is very unsanitary.

**Recommendations.**—I recommend that the schoolhouse be condemned for school purposes.

After due consideration of the above account of the Upper Seminary Schoolhouse at Madison the following order of condemnation was unanimously adopted:

## **PROCLAMATION OF CONDEMNATION OF A SCHOOLHOUSE AT MADISON, JEFFERSON COUNTY, KNOWN AS THE UPPER SEMINARY.**

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Madison, Indiana, known as the Upper Seminary, is unsanitary and unfit for school purposes; therefore it is

Ordered, That said schoolhouse is condemned for school purposes and shall not be used for said purposes from and after July 1, 1906, and in the event of any school officer, school superintendent, teacher or other person using said schoolhouse for school purposes, then the Secretary of the Indiana State Board of Health shall inform the Attorney-General, who will bring prosecution as in the statutes provided.

Passed by the Indiana State Board of Health in special session, May 18, 1906.

## **SANITARY SURVEY OF FULTON SCHOOLHOUSE AT MADISON.**

**Site.**—The site is high, dry, naturally well drained, and good in all ways.

**Building.**—Brick, built in 1875. One story, two rooms. Insufficiently and improperly lighted, heated by stoves, no ventilating shafts. Entrance is through an unwarmed vestibule where wraps are kept.

**Recommendations.**—This is an old, damp and unsanitary building, and I recommend that it be condemned.

After consideration of the above sanitary survey the following order of condemnation was unanimously passed:

**PROCLAMATION OF CONDEMNATION OF A SCHOOLHOUSE AT  
MADISON, KNOWN AS THE FULTON SCHOOLHOUSE.**

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Madison, Indiana, known as the Fulton schoolhouse, is unsanitary and unfit for school purposes; therefore it is

Ordered, That said schoolhouse is condemned for school purposes and shall not be used for said purposes after December 1, 1906, and in the event of any school officer, school superintendent, teacher or other person using said schoolhouse for school purposes, then the Secretary of the Indiana State Board of Health shall inform the Attorney-General, who will bring prosecution as in the statutes provided.

Passed by the Indiana State Board of Health in special session, May 18, 1906.

**SANITARY SURVEY OF WALNUT STREET SCHOOLHOUSE AT  
MADISON.**

Site.—The site is low and is liable to flood from Crooked Creek, near by. On one occasion the water was seven feet deep in the lower school-room and the washings from the privy floated around the schoolyard.

Building.—The building is stone, built in 1864. Two stories, two rooms. Insufficiently and improperly lighted by cross-lights. Building is damp at all times. Stairway to upper room narrow and of the kind known as box stairway, which is a great danger in case of fire or panic.

Recommendations.—I recommend that this school building be condemned for all school purposes.

After due consideration of the above survey the following order of condemnation was unanimously adopted:

**PROCLAMATION OF CONDEMNATION OF A SCHOOLHOUSE AT  
MADISON, KNOWN AS THE WALNUT STREET SCHOOLHOUSE.**

Whereas, It has been shown to the satisfaction of the Indiana State Board of Health that the schoolhouse at Madison, Indiana, known as the Walnut Street Schoolhouse, is unsanitary and unfit for school purposes; therefore it is

Ordered, That said schoolhouse is condemned for school purposes and shall not be used for said purposes after December 1, 1906, and in the event of any school officer, superintendent, teacher or other person using said schoolhouse for school purposes, then the Secretary of the Indiana State Board of Health shall inform the Attorney-General, who will bring prosecution as in the statutes provided.

Passed by the Indiana State Board of Health in special session, May 18, 1906.

## HEALTH OFFICERS' SCHOOL.

Dear Doctor.—The Annual Health Officers' School will be held in Indianapolis Thursday, June 28-29. The headquarters will be at the new Claypool Hotel, and all sessions will be in the auditorium on the eighth floor.

A formal summons will be sent to you about ten days before the meeting. Preserve the summons, and also secure certificate of attendance when you come, from the clerk at the auditorium door. The two documents will give you a legal claim against your Board for your expenses. An interesting and instructive program will be prepared.

Any suggestions in regard to subjects to be considered and for the conduct of the conference will be thankfully received.

This conference is for all officers—county, city and town. Remember the date, June 28-29.

Very truly yours,

J. N. HURTY,

Secretary.

By order of the State Board of Health.

### REPORT OF THE INDIANA STATE BOARD OF HEALTH TO THE CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH OF NORTH AMERICA WITH THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE, HELD MAY 23, 1906, WASHINGTON, D. C.

As the Legislature of the State of Indiana has not been in session since the last report of this Board, there are no new Health Laws and no changes to record.

The campaign against tuberculosis by the State Board has been actively carried on. Lectures upon this subject and the general subject of the preservation of the public health have been supplied to thirty-two teachers' institutes and farmers' institutes during the winter. Over 25,000 health circulars have been distributed. During the week beginning March 5 a tuberculosis exhibition was given in Indianapolis under the auspices of the Indianapolis Commercial Club and the Indiana State Board of Health. This exhibition was secured from the National Association for the Study and Prevention of Tuberculosis. It was held in Tomlinson Hall at Indianapolis. Lectures upon different phases of tuberculosis were given every night and every afternoon. The Governor and Lieutenant Governor of the State took active part in the work. Five thousand and one hundred and twenty-eight people visited the exhibition, and each visitor was supplied with a pamphlet treating of the prevention of tuberculosis.

During the past year the State Board has condemned twenty-eight schoolhouses as unsanitary and unfit for school purposes, and twenty-five new school houses have been constructed and three remodeled. The Indiana law gives full power to the State Board of Health in this matter. The Legislature of 1903 gave to the State Board two laboratories, which together constitute a State Laboratory of Hygiene. The laboratory con-

sists of two divisions—chemical and pathological. Each division has a skilled superintendent, with assistants. The work of the chemical division to date has been concerned mostly with making food and drug analyses, for the enforcement of the pure food and drug law. It has, however, made over 500 sanitary water analyses and has commenced the sanitary survey of White River. The bacteriological division is doing such work for the medical profession and the people generally as pertains to hygienic bacteriology and pathology. The Hygienic Laboratory has not yet finished its first year's work, but it is growing constantly, and numerous acknowledgments from citizens are received concerning its usefulness.

It is now seven years since the State Board, under a special law, has been collecting accurate mortality statistics. The statistics of births and cases of infectious diseases have not been heretofore a credit to the State, as the statutes did not permit of their accurate collection. An improvement, which is expected will be striven for by the Board, will be a law to be presented to the Legislature of 1907 which will make it possible to collect accurate birth and infectious disease records.

The Board takes pride in calling attention to the decreased death rate in 1905 as compared with the preceding five years. This decrease is 0.3. The figures show for 1905 a death rate of 14 per 1,000, and the average for the five preceding years was 14.3. This means a saving of over 700 lives. There also appears a decrease in the death rate by the same comparison in tuberculosis, typhoid fever, diphtheria, scarlet fever and pneumonia. There is a slight increase in cancer and in deaths from violence. Smallpox has been epidemic in many parts of the State, but has been mild, with very few mortalities. The total deaths from this disease for the year 1905 numbered 35. It is thought fair to conclude that at least some part of the reduction in the deaths from infectious diseases has been due to the activity of the State Health Department.

Approved and ordered forwarded as the report of the Board for the year ending May 1, 1906, to the Surgeon-General of the United States Public Health and Marine Hospital Service.

### SPECIAL MEETING.

June 28, 1906.

Called to order at 12 m.

Present: Drs. Davis, McCoy, Wishard, Tucker and Hurty.

Dr. Davis stated the object of the special meeting was to consider the matter of causing the Health Officers of the State to inspect and report upon the condition of the slaughter-houses in their respective localities.

The object was thoroughly discussed, and the following order was adopted:

**ORDER CONCERNING THE INSPECTION OF SLAUGHTER AND PACKING HOUSES.**

The State Board of Health herewith directs that county, city and town health officers shall inspect all slaughter and packing houses within their respective jurisdictions and report their findings to the State Board. The facts of the said inspections shall be recorded upon the printed forms supplied by the Board, and all reports must be made and returned within ten days after receipt of this order and the said inspection forms. The Secretary is directed to prepare forms for the purpose set forth above and submit them to the President for his approval. When duly approved by the President the Secretary shall send said forms to all county, city and town Health Officers with a letter of instructions. The Secretary is also instructed to gather in all the reports possible, and tabulate and analyze them and report the matter at a further meeting of the Board.

The annual Health Officers' School opened the morning of the 28th, and the first session had adjourned at the hour of the meeting of the Board. Various features of the school were discussed, but no orders or resolutions were passed.

Adjourned to meet June 29, at 12 m.

**ADJOURNED MEETING FROM JUNE 28.**

June 29, 1906.

Called to order at 12 m.

Present: Drs. Davis, McCoy, Tucker and Hurty.

The Annual Health Officers' School adjourned at 12 m., and the meeting was to consider the work done and to allow all necessary bills. It was the general opinion that the most fruitful discussion related to the inspection of meat and of slaughter-houses, which discussion was led by Dr. A. W. Bitting, State Veterinarian. It was

Ordered, That the Secretary should prepare a full report of the school and publish the same in the Monthly Bulletin.

## THIRD QUARTER.

### REGULAR MEETING OF THE STATE BOARD OF HEALTH.

July 13, 1906.

AFFAIRS CONSIDERED OF THE SECOND CALENDAR QUARTER  
OF 1906. AND THE THIRD FISCAL QUARTER OF 1905-1906.

Called to order by President Davis at 2 p. m.

Present: Drs. Davis, McCoy, Wishard, Tucker, Hurty.

Minutes of last regular and the special meetings of May 18  
and June 28 read and approved.

Report of the Secretary for the last quarter called for and  
read, as follows:

#### QUARTERLY REPORT OF THE SECRETARY.

The health of the State, as shown by reports to this Board,  
was generally better during the quarter ending June 30 than in  
the corresponding month last year. Smallpox still prevails to a  
slight degree, generally in mild form. There were no smallpox  
deaths during the quarter, the summary being as follows:

Cases decreased 31 per cent., deaths decreased 100 per cent.,  
area invaded decreased 21 per cent.

The table presented herewith shows the data of the disease dur-  
ing the quarter. No marked epidemics are to be recorded. The  
work in the Laboratory of Hygiene has been going on as usual,  
and it is a pleasure to report that these departments are meeting  
with increased favor from the people and physicians of the State.  
The reports of the Bacteriologist and of the Chemist have been  
published each month in the Bulletin, and are here summarized  
for the quarter. Mortality statistics have been collected, tabulated  
and analyzed as usual; and the statistics pertaining to births,  
contagious diseases and marriages will be collected as soon as pos-  
sible.

## SMALLPOX FOR QUARTER ENDING JUNE 30, 1906.

	No. of Cases Reported.	Deaths.	No. of Counties Invaded.
April, 1905.....	151	4	18
April, 1906.....	97	0	11
May, 1905.....	125	2	11
May, 1906.....	112	0	14
June, 1905.....	114	4	13
June, 1906.....	58	0	8

Notices of the condemnation of the schoolhouses at Madison and Kent, Jefferson County; and of West Newton and Valley Mills, Marion County; of Rockcreek Township and Polk Township, Huntington County, were formally made out and sent to the officers having jurisdiction on May 26, 1906. Instructions to said officers being duly given.

## VISITS AND INSPECTIONS.

May 22, Monroeville.—On account of inspection of schoolhouse and to confer with town authorities in regard to general sanitary matters. The report of this survey was presented at the special meeting held June 28, and action taken.

May 28, Zionsville.—On this date, in accordance with a request from the school trustees of Zionsville, I visited the place and made a sanitary survey of the schoolhouse. I was met by the three trustees and three or four other citizens, and the schoolhouse was thoroughly inspected. I deem it unnecessary to here give all the facts secured by the inspection, because the trustees immediately agreed that all changes and improvements recommended should be made before opening the school in the fall.

May 28, Shelbyville.—I visited this city upon request of the City Board of Health, who wished to have a consultation in regard to the sanitary affairs of their city. Upon arrival I was met by the members of the Board and, together with the Mayor, we held a consultation. The authorities named desired to draw up and have passed, if possible, a local ordinance controlling the meat supply and in regard to the removal of nuisances affecting the public health. The subject was discussed for fully two hours, and then we rode over the city inspecting various unsanitary conditions. I think my visit was productive of good, for ordinances governing the subjects named above have since been passed, and



are being enforced. The Mayor of Shelbyville and the Board of Health passed a resolution of thanks for the visit and help rendered.

May 30, Michigan City.—I visited Michigan City in accordance with an invitation from the Lake County Medical Society in order to read a paper on the subject of "The Early Diagnosis of Tuberculosis," and to deliver an illustrated lecture to the public upon "Tuberculosis; Its Prevention and Cure." I was cordially received by the representatives of the association named and by the city and county health officers. I think not a little good was accomplished for the public health cause.

June 22, Richmond.—On this date I visited Richmond in order to deliver a lecture at a called meeting of citizens upon the "Prevention of Tuberculosis." A good audience gathered in the High School auditorium, and afterward the Wayne County Anti-Tuberculosis Society was organized with 96 charter members. Mr. Jesse Reeves was elected president.

The Annual Health Officers' School was held June 28 and 29. The Claypool Hotel, Indianapolis, was made headquarters, and, with the exception of two sessions, the meetings were held in the auditorium of the hotel. The following program was carried out and, in addition, a special lecture was given by the Secretary concerning "Recent Improvements in Antitoxin."

#### PROGRAM.

##### First Session, June 28.

10:00 a. m.—Called to order by T. Henry Davis, of Richmond, President of the State Board of Health.

Welcome.....Governor J. Frank Hanly  
 Needed Medical and Health Legislation.....Glen Kimball, Marion  
 The Weak Places in the State's Sanitary Service, and How They May  
 Be Strengthened.....J. N. Taylor, Crawfordsville  
 Discussion.

##### Second Session, 2 p. m.

The Prophylaxis of Syphilis.....A. W. Brayton, Indianapolis  
 Discussion.  
 Eyes, and How to Care for Them.....J. McLean Moulder, Kokomo  
 Discussion.  
 Slaughter-House and Meat Inspection.....A. W. Bitting, Lafayette  
 Discussion.  
 Question Box.

## Third Session, 8 p. m.

## Tuberculosis Symposium.

- The Health Officers' Opportunity in the Combat Against Consumption.....Geo. T. McCoy, Columbus
- Treatment of Joint Tuberculosis at Sea Breeze..F. A. Tucker, Noblesville
- Home and Foreign Sanatoria (Lantern Illustrations).....
- .....J. N. Hurty, Indianapolis
- Discussion.

## Fourth Session, June 29, 9 a. m.

## Question Box.

- How to Manage the Milk Supply.....H. E. Barnard, Indianapolis
- Discussion.
- Widal and Diazo Tests for Typhoid Fever..T. Victor Keene, Indianapolis
- Discussion.

The attendance was 241. All city, county and town health officers were summoned. The interest and discussions were excellent. Sveral letters received since the meeting from various gentlemen who attended confirm the belief that the conference resulted in much good for the public health cause.

**SANITARY SURVEY OF SCHOOLHOUSE AT SPICELAND, HENRY COUNTY, JUNE 29, 1906.**

This building belongs to a society known as "The Spiceland Academy."

**Site.**—The site is satisfactory in every way. Indeed, it is a beautiful park and has excellent natural drainage.

**Building.**—It is an old frame building and has been painted within the last two years. It has two stories, four schoolrooms, two halls, three cloakrooms. The stairs are of easy ascent, floors throughout the building are bad; foundation is stone; no basement. There is a dugout, or hole, beneath the building in which are placed two ordinary wood stoves with galvanized iron jackets. From these jackets tin pipes conduct heat to the various rooms above. This is a makeshift furnace, receiving all its air from the dugout or hole. It is therefore true that the rooms above receive ground air and frequently damp air which has been warmed by passing over the surfaces of the stoves. This heating arrangement is unsanitary, inadequate and dangerous. In addition to this makeshift furnace stoves are placed in each room.

The building is too much shaded. Large, beautiful shade trees spread their foliage on every side, obstructing sunshine, light and air.

**Primary Room.**—This room is 33x33x13 feet, 52 seats, enrollment 50; lighted by eight windows; ventilation by windows alone; no ventilating ducts. There is ample space in this room for the children enrolled and the light is ample, but the teacher is compelled to look into the light. Slate blackboards.

**Room No. 2.**—This room is 33x33x13 feet, contains 39 seats, enrollment 36. It is lighted by eight windows, blackboard is painted on the

walls and shiny and chipped in places. Part of the blackboard is wood; the ceiling is broken and has fallen off in several places. This room is heated by a coal stove in conjunction with the makeshift furnace above described.

Room No. 3.—This room is 24x45x13; contains 50 seats; enrollment not given. It is lighted by eight windows; teacher is compelled to look into the light; blackboards are painted on the plaster walls and shiny and chipped. The room is heated by a coal stove in conjunction with the makeshift furnace above described.

Room No. 5.—This room is 33x24x14 feet, and contains 42 seats; enrollment is 46. There is ample space and light for the pupils, but the teacher is compelled to look into the light. The slate blackboards are satisfactory. The room is heated by a wood stove in conjunction with the makeshift furnace above described.

Outhouses.—There are two outhouses for the sexes, but both are old, dilapidated frame affairs in an awful condition.

Opinion and Recommendations.—In addition to what has been told above, the testimony is to the effect that in cold weather school is frequently dismissed from this building or the children hover around the stove to keep warm. Inquiry developed the fact, that coughs, colds, catarrh and rheumatism prevail every winter among the students. All of this is to be expected from the survey above given. It is my opinion the schoolhouse is unsanitary in every way and it is certainly true that many children have been injured in their health in the past while attending school in it. Indeed, I have no doubt that many children have not only suffered from sickness, but also have died in after life from injuries received to their health in this damp, poorly lighted, poorly heated and insufficiently ventilated old schoolhouse.

I recommend that the above schoolhouse at Spiceland, Indiana, be condemned for school purposes, the condemnation to go into effect June 1, 1907, and that the Spiceland school authorities be ordered to make certain sanitary improvements for this winter. The following proclamation of condemnation is recommended:

**PROCLAMATION OF CONDEMNATION BY THE INDIANA STATE  
BOARD OF HEALTH, FOR PUBLIC SCHOOL PURPOSES, OF  
THE FRAME SCHOOLHOUSE AT SPICELAND, HENRY  
COUNTY, KNOWN AS THE SPICELAND ACADEMY.**

Whereas, It appears to the satisfaction of the Indiana State Board of Health in regular session July 13, 1906, that the frame schoolhouse belonging to the Spiceland Academy, situated in the town of Spiceland, Henry County, Indiana, and used for public school purposes in said town of Spiceland, is unsanitary, causing sickness among the pupils, and is unfit for school uses; therefore it is

Ordered, That said schoolhouse is condemned and it shall not be used for school purposes the coming school term of 1906 and 1907 unless the following improvements are made, to-wit:

First. All windows shall be made easily movable for ventilation purposes and shall be provided with dark-colored shades, so light may be properly tempered.

Second. All stoves shall be provided with galvanized iron jackets and the unsanitary and dangerous jacketed stove arrangement in the hole beneath the building shall be abolished. It is recommended that a basement of proper size, with walls and cemented floor be made, supplied with efficient furnaces, taking air from the outside.

Third. Decent outhouses shall be supplied for the sexes and shall be kept clean and decent, with good walks leading to them. And it is further

Ordered. That, as the said schoolhouse at Spiceland, Henry County, Indiana, can not be made truly sanitary by repairs, and as the improvements ordered are merely temporary makeshifts intended to obviate the necessity of closing the school at Spiceland, Henry County, Indiana, the coming winter, therefore the said frame schoolhouse, belonging to the Spiceland Academy, at Spiceland, Henry County, Indiana, is finally and absolutely condemned for public school purposes and shall not be used for such purposes after July 1, 1907; and any board of school trustees, or any township trustee, or any school teacher, or any other person who shall violate this proclamation of condemnation and shall hold school in the said schoolhouse after July 1, 1907, shall be prosecuted in the courts of the State by the Attorney-General as in the statutes provided.

Passed July 13, 1906.

After discussion the above proclamation was unanimously passed as an order of the Board.

#### REPORT OF INSPECTION OF THE SCHOOLHOUSE AT EMINENCE.

By T. Victor Keene.

May 31, 1906.

Approaches.—The only approach to the school building is a gravel road. There are pieces of an old wooden sidewalk remaining, but the gravel road is the approach commonly used. This is a good roadway, but in rainy weather it is certain to be muddy. The schoolhouse is located ten feet off this road. Leading from the road to the entrance of the building is a wooden walk about six feet wide and in fairly good repair.

Grounds.—The ground is located on a high point, with excellent drainage. The entire area of the ground is about one acre. The building is located on the roadside of the ground at about its center, thus dividing the ground into two play lots—one for the boys and one for the girls. It is fairly well sodded and well drained. On the grounds are two closets of the type ordinarily seen in country schoolhouses, but both are in a very dilapidated and dirty condition. One closet is 75 feet from the driven well, from which the water supply for the school is taken, but the drainage from the closet is away from it instead of towards it.

Description of School Building.—The schoolhouse is a two-story brick building, with brick foundation and no basement. The building occupies an area of about 50x25 feet, with a small hall in front, about 12x10 feet. The building is in a very dilapidated condition; the walls bulging, and in some places to such an extent that it can be readily seen with the

naked eye. Efforts have evidently been made from time to time to strengthen the weakened walls, for there are numerous bolts and braces present. The interior consists of four rooms, about 25x25 feet. The rooms are all of the same dimension and general height. Each room has five windows, 2½x6 feet. The windows were in good condition, every window in the building being easily raised and lowered, and the glass plates were all intact. Each room was heated by a stove, which was not surrounded by protective screen. I was told that in the winter time those children sitting near the stove suffered because of the heat, while those far removed from the stove were always complaining of lack of heat.

The blackboards in all the rooms were made by painting the plastering with a heavy black enamel paint and were glossy and very hard on the eyes. In many places they were cracked and chipped. The ceilings were all of painted wood and were 15 feet high. The plastering on the side walls was loose and in many places had fallen off. The floors were all shaky and unsafe. In one room, owing to the bulging of the brick wall, the joists had slipped out of the sockets in the brick wall and the floor in that part of the room sagged three inches. In places the bricks in the wall were so loose that they could be picked out with the hand.

The primary room was much too small. This room was about 25x25 and accommodated 67 pupils. The seats were old fashioned straight-back ones, and owing to the bad condition of the floor many of the seats were not level; in some instances one of the seats would be two inches lower than the other, although the desk in front would be perfectly level. The desks were old and were of different sizes and models. This primary room was always overcrowded, according to the statement of the teacher. Leading from one side of this primary room was a cloakroom, 18x6. The cloakroom did not have enough hooks to accommodate the number of pupils in the school. It was necessary for a child before entering the cloakroom to pass into the schoolroom, as the only entrance was by way of the schoolroom. This is a very bad condition.

Although the roof had apparently been shingled very recently and was in good repair, the statement was made to me that every time it rained or stormed water leaked into the room, and I know this to be a fact, because it was raining at the time the writer was inspecting the school, and in one portion of the rickety floor was a puddle of water, and water could be seen dripping down the wall. The blackboards in this room were in bad condition, being glazed. The seating capacity of this room was much less than its floor area would seem to indicate, owing to the fact that the heating was by a stove, which caused a loss of considerable floor space. The other room on the ground floor was of much the same type as the one just described—had the same glazed blackboards, the same number of windows and window arrangement, the same heating plan, the same variety of desks, the same cloakroom arrangement, except that the area of this cloakroom was about 12x6 and contained a small round window about 18 inches in diameter. Only 30 pupils are in this room, it being used for pupils from eight to fifteen years of age. This room was in a worse condition than the one previously described, for the reason that the floor was less solid and the brick wall less safe.

It would have been a very simple matter to have picked out part of the wall with the hands, the bricks were so loose.

**Halls.**—From the downstairs hall a set of winding steps about six feet wide lead to the second story. This stairway was solid, but in case of fire, if there would be any resulting panic, it is hard to see how it would be possible to avoid injury to pupils on this stairway. It is, however, well lighted.

On the second floor there are two rooms of the same size as the ones just described.

**Water Supply.**—The teacher of the school informed me that all the drinking water used was obtained from a driven well, which is said to be 101 feet deep. There were no water buckets or cups at all in the school, the children going to the well and drinking freshly drawn water. There were two cups on chains attached to the pump.

**Surroundings.**—There are no houses nearer than 250 feet.

**Managing Board.**—Mr. J. C. Blunk, of Littlepoint, is trustee, and Mr. H. A. Blunk and H. K. Lee, of Hall, R. R. No. 2, are the members of the Board of Education.

**Local Feeling.**—There seemed to be considerable local feeling against the use of the building. Several citizens told me that whenever a storm came up they immediately went to the schoolhouse and removed their children; that in several instances the teacher had taken it upon himself to dismiss the school because of a storm. Mr. H. A. Blunk, a member of the Board, stated that it was his desire to repair the building to such an extent as to make it safe, which he admitted was not the case at the present time, and to then, later, if possible, secure the abandonment of several small district schools by uniting them into one large school, and then erecting a modern building at an expense of from \$16,000 to \$20,000. Mr. J. C. Blunk, Trustee, would not express an opinion regarding the situation. He admitted that the building was unsafe, but seemed to think the building could be repaired and made so. He stated that he personally did not think it advisable to repair the building for at least a year, for it could probably be done cheaper later than at the present time. However, he expressed himself as perfectly willing to do anything that seemed desirable. Mr. H. K. Lee did not express any opinion.

This schoolhouse is the property of the township, and the township will be the body that will have to build a new building or repair the old one. The township at this time is nearly out of debt, according to the statement of the Trustee, and is in a position financially to do anything which may be indicated.

I recommend that this building be condemned, as in my judgment it is impractical to attempt to repair it.

After discussion this school building at Eminence was condemned.

## REPORT OF INVESTIGATION OF TYPHOID FEVER EPIDEMIC AT GREENCASTLE.

By Dr. Helene Knabe.

The undersigned was sent to Greencastle, Indiana, April 10, to investigate an epidemic of typhoid fever which has appeared there.

Upon my arrival I conferred immediately with Dr. W. M. McGaughey and Dr. Hutcheson, the local and county Health Officers. Fifteen cases had been reported, one of whom had died April 7. The majority of the cases were children, some in school, others below six years. Only a few adults were sick at the time.

There were a few cases known to have a little fever during the preceding weeks, but none of them had been diagnosed typhoid fever. The physicians in whose practice the cases occurred gave me their addresses and I obtained specimens of blood from all of them. I was also fortunate in meeting four persons who had not been under a physician's care at all, but in every case enough of a history could be obtained to suspect typhoid fever, and here also I took blood for Widal tests. Other cases had been diagnosed lagrippe, nervousness, remittent fever, etc.

Of the twenty-two specimens of blood to which I applied the Widal test every one showed a pronounced reaction, thus clearly demonstrating that the infection is now widespread in Greencastle.

The universal belief among the citizens of Greencastle was that the infection had come through milk obtained from the Forrest Hill Dairy, owned by Mr. J. W. Lemmink. Two sons of this family were sick for a short time in March, though not diagnosed typhoid fever, and as most of the patients had been taking milk from this dairy they suspected it first of all. Careful consideration of the circumstances, however, seems to show that a cause other than milk was at work here, for some of the families in which typhoid fever has appeared use no milk; others do not get it from the Forrest Hill Dairy.

An investigation of the sanitary conditions in Greencastle reveals defects enough to account for the spread of typhoid fever, or any other infectious disease. The town has about 5,000 inhabitants and its location is near the river. Part of the streets are macadam and reasonably dry; others are not improved and in very bad condition.

Greencastle has no sewer and many dwellings are provided with surface privies, which do not often require cleaning, since after a rain the soft earth absorbs nearly all of their contents; at the same time water appears in many a cellar in town. Not infrequently I found people who stated that their cellars were damp during the greater part of the year.

The cleaning of streets is not given sufficient attention. Many of the alleys are in a very bad condition, for instance, the alley on Vine street, behind W. L. Deuman's property, is a regular dumping ground. Center street, bordering the campus of De Pauw University, is strewn with all kinds of filth. On Water street, very near to the point where it crosses Washington street, I saw a large accumulation of waste from a grocery store, decaying vegetables, etc. Besides these places mentioned there are many others equally as bad.

Very unsanitary is a contrivance which I now wish to describe. A

part of the hotels and residences are supplied with cesspools, from which a line of tiling is laid, eventually draining at some point in an open gutter on the streets. These drains in warm weather give rise to a condition that is no credit to any town. The day of my visit to these places was cool and damp, and the heavy rain had washed away most of the contents of these cesspools, still there hovered the strong odor of urine about the outlets of the drains. Residents of the place declared it was not at all uncommon during the summer, after a rain sufficient to overflow the cesspools, to find their contents lying in the gutter, covered with flies and emitting a most unpleasant odor.

One place standing in sore need of betterment is in the rear of Florence Hall, which is used for a boarding house for De Pauw students. The untidy back porch, with its dirty uncovered barrel, half filled with waste from the kitchen; the outhouse a short distance away, which drains its foul contents into a shallow ravine after a rainfall, where a tiny stream of water washes away some of the filth, to distribute it where the ravine extends in the immediate vicinity of dwellings; these are conditions which, if not changed very soon, will surely give trouble in the coming warm season. There are also several cesspools in this location. One of them is leaky, the seepage appearing on the slope at the side of the ravine; the other two were filled to the brim, when I saw the place, one of them having run over the week before on account of heavy rains.

An old well is also to be found in this vicinity. The brick with which it is built over is crumbling away, and as it is on the level with the grass, with no railing there to hinder any one from walking right into it, there is reason to suppose that some one may come to his death by drowning. The well should at least be fenced in.

**Water Supplies.**—Greencastle receives a large part of its water from water works. The filters are laid in the bed of ——— Creek. A large open well receives the filtered water. From here it is pumped into a standpipe over thirty feet high, and thence passes into the general pipe system. The water has been of good quality until a year ago, when it began to be muddy after heavy rains. Nothing was done, however, to get at the root of the trouble. Since the present epidemic of typhoid fever appeared the Health Officer sent some of the water to the State Laboratory and the examination showed the water to be badly polluted.

When I visited the water works I noticed that there was an intake from the creek. I suggested that there might be the source of the trouble. The engineer stated that it was sealed, however, but when the water in the creek was high he could see the muddy water come in from the filter, an evidence that the filter was damaged.

At the present time I am certain of 37 cases, four of which may be accounted for by direct contact, because they developed subsequently to nursing a patient in their house. In eleven instances two cases occurred in the same family, but seven of them came so near together that I could not positively determine whether or not one of the patients had been infected from the other. I am inclined to believe the infection in the majority of these cases occurred at the same time. In one family three cases occurred at the same time. Two of the little patients are in school; the oldest sister, age sixteen, at home. These three cases were diagnosed



as remittent fever. I did not have a chance to get blood from the younger children, and they are not included in the above number. If the statement of the attending physician—"all three had the same trouble"—is to be taken as correct, the number of cases rises to thirty-nine, for the blood of the older sister gave a positive Widal reaction. Three other cases of whom I was unable to get any blood on account of temporary absence were children, two of whom had been with their mother in Muncie four or five weeks ago and when there a short time became sick. The diagnosis was "Indigestion." Now the mother is in bed with fever and her blood shows positive Widal reaction. (Mrs. Maxwell.) The third case is Mrs. Detro's little boy. She stated that he had been sickly and is now very anemic. Mrs. Detro has been under a physician's care for "nervousness." Her blood shows also a typhoid reaction.

Of thirty-nine cases (omitting the three last mentioned) twenty-four have the city water as their house supply and seven drink it every day in school. Four cases, including the deceased, had their places of employment down town, and probably used the city water there. In six of the houses where typhoid fever is now present the water supply is from a dug well; in three cases cistern water is used.

The first case which appeared this winter was that of a teamster, Mr. Gladwell, and he stated that he had been drinking almost anywhere around the country, from little ditches, etc., so that there is a probability of his having been infected outside of the city. The other case, Irving Brown, age seven, at watercress which he and several boy friends were picking at a branch outside of the city. This branch of water is known to receive sewage, and the child fell ill on the fourteenth day after eating the cress.

Taking it altogether, the water and general unsanitary conditions seem to me the most potent factors causing this epidemic.

#### Summary—

Number of cases reported.....	15
Cases diagnosed by Widal reaction.....	22
	— 37
Remittent fever (see above).....	2
	—
Total .....	39

#### INSPECTION OF DAIRIES AT GREENCASTLE.

In connection with the investigation of the epidemic of typhoid fever at Greencastle I inspected the following dairies:

De Pauw farm dairy, owned by Mr. Harry Nugent and Dr. Bence. This dairy does not supply many customers; ten milk cows are kept. The stable is not very well arranged, providing also shelter for the horses. The floor on which the cows stand is covered with boards; walls and ceilings are not as clean as they ought to be. The stable also held many chickens. The water is used for washing the cans and is taken from a spring. This spring is covered by a small stone house. Bottles and milk cans are kept outside.

Dairy of Mr. Sidener: Thirty-five cows. The barn floor is partly wood and partly clay, which was very soft on the day of my visit. I happened to get there during milking time. Neither the man who did the milking nor the cows did look very clean. The milk can was kept in the stable during milking time. Harness and other utensils were hanging in the same barn. One cow was sick, probably hurt, having horned itself a week before with other cows.

Dairy belonging to Mr. Paul Tucker: Twenty-five cows. Barnyard very dirty. The dung from the stables had not been hauled away for several weeks and was heaped up around the barn so that it was troublesome to get inside without wading through it. The cows did not look very clean, neither did the inside of the stable. The milk is taken into the house, down a small, dingy stairway into a kitchen in the basement. There it is strained and filled into cans or bottles. This kitchen was clean when I saw the place. The trough around the cistern pump contained chloride of lime. Filtered cistern water is used for cleaning and scalding cans, etc.

Forest Hill dairy, owned by J. W. Lemmink: On account of the suspicion which people had regarding the spread of typhoid fever from this place I made a thorough examination of the whole place. The dairy is several miles away from town, in the open country, with buildings situated on a little hill. A large barn accommodates the cows. About one-quarter is utilized for the horses, but they are far removed from the cows, and between them is a high board wall. The floor is made of clay and is dry and hard. A wooden gutter behind the cows is kept very clean, and everything is in good condition. I saw this dairy at milking time, and dare say it was done in the cleanest way in which I have yet observed. The air in the stable, both doors of which were open, was very good, and the cows were very clean. Mrs. Lemmink, who did the milking, used a two-quart cup to receive the milk. When half filled this was emptied into a bucket which stood covered in the barn door. The straining was done on the side porch, where a table, bottle rack, etc., were provided for this purpose. Cans, strainer, etc., as well as the table and small tubs in which the bottles were scalded, were scrupulously clean. Some of the bottles were kept in the bottle rack, mouth downward, others in boxes provided with oilcloth cover, and all very clean.

The milk is rich and of good quality, as shown by the examination made in the Laboratory of Hygiene, which showed 5 per cent. fat. The house in which Mr. Lemmink and his family live is old, but the rooms are kept clean and tidy. A privy vault at the side of the house opposite from the porch where the milk is handled is not in good condition, and Mr. Lemmink stated that he was preparing to remove it and make a new one further away. Its drainage does not come near the house, nor could it go into the spring from which the water is used. This spring is quite a distance from the house and also from the barn, but some seepage from the barnyard is evidently getting into it, as shown by analysis of the water which was made a short time ago in the Laboratory of Hygiene. When I saw the place the barnyard was clean and dry. Mr. Lemmink stated that the cows were kept in the barn only at milking time, except in very cold winter. One case of typhoid fever occurred in this house

two years ago; other cases have been found in town more or less at all times. There were also several cases in town before the two children, Charles and Lawrence, were sick this winter. Both children had no symptoms to make any one suspect typhoid fever, and as Dr. Hutcheson, who is the family physician, verified the statements made by Mr. and Mrs. Lemmink in every particular I have no doubt that they were true. Dr. Hutcheson's books showed that he was called only once, because the children were sick with acute symptoms, having had a very hearty meal the day before, and twice after that time some members of the family came to the doctor's office for medicine.

There is, of course, no doubt that both of the children had a mild case of typhoid fever, because their blood gave a positive reaction to the Widal test.

The foregoing investigations I have carried out to the best of my ability, taking great care not to be biased by any opinion advanced by persons with whom I came in contact.

HELENE KNABE, M. D.

Renewal of Permits.—After consideration of applications, the renewal of permits to the J. T. Polk Co., Greenwood, and to the plants of the American Tin Plate Company at Elwood, Anderson, Muncie and Gas City, were ordered, and the Secretary was directed to notify the parties concerned.

It was ordered that H. E. Barnard should represent the Board at the National Association of State Dairy and Food Departments, to be held at Hartford, Conn., July 17, 18, 19, 20, 1906, his expenses to be allowed.

## FOURTH QUARTER.

---

### REGULAR MEETING OF THE STATE BOARD OF HEALTH.

October 12, 1906.

#### THE AFFAIRS OF THE FOURTH FISCAL QUARTER AND OF THE THIRD STATISTICAL OR CALENDAR QUARTER CONSIDERED.

Called to order by President Davis at 2:30 p. m.

Present: Drs. Davis, McCoy, Tucker, Wishard, Hurty.

Minutes of last regular meeting of July 13, 1906, read and approved.

#### QUARTERLY REPORT OF THE SECRETARY.

I have to report that the work of the various departments has gone on without interruption and without friction during the quarter.

The Secretary made twenty visits during the quarter, as follows:

July 2, Spiceland, on account of inspection of schoolhouse, at request of citizens.

July 9, Frankfort, account of inspection of tuberculosis conditions and conference with city Health Officer.

July 25, South Bend, account of tuberculosis exhibit and lecture to public audiences.

July 30, Kennard, account of inspection of schoolhouse, at request of citizens.

July 31, Petersburg, on account of inspection of schoolhouse, at request of citizens.

August 6, Kokomo, to meet the County Superintendent and Trustees of the county to consider the subject of school hygiene.

August 8, Greensburg, on account of tuberculosis exhibit, and to lecture to Teachers' Institute and to public audiences at night.

August 20, Decatur, on account of tuberculosis exhibit and to lecture to Teachers' Institute, and to lecture to popular audience at night.

August 27, Merom, to lecture before the Merom Chautauqua upon the subject of "The Prevention of Disease."

August 30, New Castle, to consider school hygiene before the Teachers' Institute, and to meet the County Superintendent and Trustees.

September 5, Noblesville, to lecture before the County Teachers' Institute upon the subject of "School Hygiene," and inspect schoolhouse.

September 7, Monticello, to lecture before the County Teachers' Institute and meet with the County Superintendent and Trustees to consider school hygiene.

September 16, Ottawa, Ill., to visit the Ottawa Tent Colony, and to study the outdoor treatment of tuberculosis as practiced at that place.

September 20, Madison, on account of tuberculosis exhibit, and to make public lecture on the subject.

September 25, Columbia City, to appear before the Whitley County Medical Society, read a paper upon "The Prevention of Disease," and to deliver a public lecture in the evening.

September 26, Peru, to lecture upon the work of the Board of Health and the prevention of disease before the Y. M. C. A.

September 28, Richmond, to meet Prof. Sackett and Dr. Davis to consider the proposed employment of Prof. Sackett to make a sanitary survey of White River.

October 2, Rochester, to meet with the Fulton County Medical Society to present the subject of "Disease Prevention," and to lecture in the evening upon the "Prevention and Cure of Tuberculosis" before a popular audience.

October 8, Muncie, to lecture before the State Charities Conference upon the subject of "Tuberculosis."

October 10, Muncie, to read a paper before the Indiana State Federation of Women's Clubs, title, "What Can the Federation Do to Help Forward the Public Health Work."

October 11, Winona, to read a paper before the Women's Federation of Literary Clubs, title, "Tuberculosis; Its Prevention and Cure."

#### TUBERCULOSIS MEETING AT SOUTH BEND.

On July 25, upon invitation of the St. Joseph Medical Society and the health authorities of South Bend, I visited that place, carrying with me the tuberculosis exhibit of the Board. Upon arrival said exhibit was promptly put into position, and at 2 o'clock a lecture upon the "Prevention of Disease" was delivered to an audience of about five hundred persons. In the evening the exhibit was visited by one thousand persons, and when gathered in the audience chamber I made an illustrated address upon the "Cure of Tuberculosis in the Incipient Stage." The following day, July 26, another audience inspected the exhibit and further addresses were made. The South Bend daily papers published full accounts of the meeting and the addresses, and gave editorials upon the subject. It is believed that this visit was attended with good results, and was many times worth the work and expense given to it.

#### SCHOOLHOUSE AT KENNARD.

The school building at Kennard was condemned by the State Board of Health last fall, and the authorities were in dispute as to the location of the new building. The controversy ran high, and at last all concerned agreed to abide by the decision of the Secretary. Accordingly I visited the place, met the committees of citizens, inspected the various proposed sites, and made my recommendations. I have since learned that a second compromise was effected, and the old site was adopted.

#### PETERSBURG SCHOOLHOUSE.

The schoolhouse at Petersburg is brick, a very old structure, and unsanitary in every respect. The people of the city know this to be true. Several letters were received from citizens asking the State Board of Health to make inspection of the building. All of these represented that the majority of the patrons were afraid of the present schoolhouse because of its cracked walls and general unsafe condition, and also because it was unsanitary. They were told to petition the State Board of Health in regard to the building to show that the people were in favor of action. Accordingly the following petitions were received. The first one was dated May 11, the second August 3, accompanied by a letter signed by the Treasurer and Secretary of the School Board:

## PETITION.

Petersburg, May 11, 1906.

State Board of Health:

Gentlemen—We, the undersigned patrons of the Petersburg public school, do hereby petition you to visit this place and make an examination of the school buildings here. In our judgment the building is unsafe and unsanitary and should be condemned.

DR. T. W. BASINGER,  
Ex-Secy. County Board of H., and 69 others.

Petersburg, August 7, 1906.

We are enclosing you a certified copy of the petition gotten up here in the last few days relative to the building of a new schoolhouse. Mr. Nichols, president of the School Board, is out of town and will not be home for ten days. His absence accounts for his not joining us in the affidavit herewith attached.

The original petition is kept here to file with the clerk of the town, to which officer you are referred if you deem it advisable for further information. The petition is to be brought before the Town Board for the purpose of securing a permit in accordance with the law to proceed to the erection of a school building.

In the last town election there were 489 votes polled. Since then, owing to the closing down of the glass factory, about eighty voters have gone from here, leaving at this time about 409 voters in the corporation. As you will observe, there are 351 signatures to the petition, making almost 86 per cent. of the present voting population of the town. Some voters are out of town and were not canvassed. In all there are not more than twelve or fifteen voters in the corporation opposed to the plans of the School Board, and they are under the direct influence of interested parties.

J. R. CHEW, Treasurer.

H. H. TISLOW, Secretary.

## PETITION.

Petersburg, August 3, 1906.

We, the undersigned taxpayers and patrons of the Petersburg, Indiana, public schools, knowing the unsanitary and dangerous condition of the public school buildings in said town, and further knowing the said school buildings are inadequate to properly accommodate the large number of school children in said town, hereby ask that a new and commodious school building be erected at the earliest possible date.

I. H. LAMAR, M. D., and 350 others.

On account of these petitions the Secretary visited Petersburg on July 31. A delegation of citizens, headed by the members of the School Board just named, and accompanied by the entire town board, accompanied the Secretary to the building. A very casual inspection shows it to be unsafe, for the walls on every side

are cracked. It is braced with iron rods running through the building from all four directions. The floors are in bad repair, every room improperly lighted, insufficiently ventilated, and insufficiently warmed. The stairway leading to the upper story is boxed part of the way, narrow and steep. It is unnecessary to here detail the size of the rooms with the lighting facilities, because the whole building is so bad from every point of view. There are closets for the sexes in the basement which are hardly possible. They have cemented floors, but are dimly lighted by windows which enter just above the ground level. The entrances to said closets are from the rear of the building, and the children must walk from the front around the building to use them. As said above, every feature of this building is unsanitary, and it is also unsafe. I, therefore, urgently recommend its absolute condemnation for school purposes. The building is occupied at this time, has had some repairs and further bracing, and it perhaps would be best not to close the building, but to let it be used this winter, and to pass an order of condemnation to take effect June 1, 1907. It is to be regretted that the petition could not be attended to sooner. Had it been possible for the Secretary to make the survey soon after the first petition was received, which was May 11, the condemnation might have been early enough to secure a new building for this winter.

#### KOKOMO.

On August 6 I visited Kokomo to meet the County Superintendent and Trustees of the county to consider the subject of school hygiene. Two hours work was consumed in discussing what could be done to better the sanitary surroundings of the school children in the country schools of Howard County. The fact in regard to the prevalence of imperfect vision in school children was presented, and a sample of Snellen's vision chart was shown. The Trustees were urged to purchase a supply of these charts, and to direct their teachers to watch the children closely and examine the eyes of all who wrinkled their foreheads when looking at their books and who would be discovered glancing at their work at various angles. They were urged also to require that the teachers examine the ears of children who seemed dull



and would ask to have questions repeated. The Trustees were unanimous that they would attend to this. Further recommendations were given in regard to ventilation and lighting the school-rooms, also in regard to keeping them clean. Prof. E. E. Roby, County Superintendent, formulated the recommendations in writing, and they were agreed to by all present. I am confident this conference with the Trustees of Howard County was attended with excellent results.

Meeting of County Commissioners.—Finding that the County Commissioners were in session, I called upon them with the secretary, Dr. R. H. Smith. In a general conversation upon the care of the public health the facts of the relations of the County Board to the work were fully brought out. All three of the Commissioners were deeply interested, and a formal meeting of the County Board of Health was called. An order was issued authorizing the County Officer to have circulars printed upon the prevention of various diseases and circulated throughout the county. An order was also passed that the Secretary should also employ a deputy when necessary for the disinfection of houses which had been occupied by cases of infectious diseases. It is certainly true that this conference with the County Health Board resulted in much good.

#### GREENSBURG.

On account of an invitation from the Decatur County Medical Society and the County Superintendent of Schools, I visited Greensburg August 8. Dr. Knabe accompanied me to aid in the management and presentation of the tuberculosis exhibit. We had two meetings, one in the afternoon and one in the evening. The tuberculosis exhibit was placed in position in one of the large rooms of the high school building, and during the day was visited by several hundred citizens and all of the teachers, numbering 210. A lecture upon school hygiene was delivered before the teachers in the afternoon; and in the evening, the hall being crowded and overflowing, an illustrated lecture upon tuberculosis was given. A vote of thanks was offered for the instructions, and also a vote of confidence and approval of the general work of the State Board of Health.

## DECATUR.

I visited Decatur August 20 in answer to an invitation of the citizens of the city and the county superintendent. The tuberculosis exhibit was taken along and placed in position in the lecture room of a church where the teachers' meetings were held. This exhibit was visited by several hundred citizens and all of the teachers. In the afternoon a lecture upon school hygiene was delivered before the institute, and in the evening a popular illustrated lecture upon the prevention and cure of tuberculosis. The audiences in both instances were large. In the evening all who applied could not be admitted. As in former instances of this kind, resolutions of thanks and confidence and approval of the work of the State Board of Health were passed.

## MEROM.

On August 22 I visited Merom, Sullivan County, to lecture upon disease prevention and the public health at the Merom Chautauqua. This Chautauqua Assembly has become quite celebrated. The grounds are situated on the east bank of the Wabash River, overlooking vast areas of beautiful country, the Wabash being visible in its windings for many miles. It is a beautiful spot, and a fit place in which to study the questions which are usually presented at assemblies of this kind. The audience numbered about fifteen hundred, and close attention was given to the teachings which were offered.

## NEW CASTLE.

August 30 I visited New Castle to address the annual Teachers' Institute upon the subject of school hygiene and the general prevention of disease. The conference was held in the court room of the county court house. Two hundred and fifteen teachers were present, and probably one hundred citizens. The address, which was along the usual lines, was well received, and a warm resolution of thanks was passed.

## NOBLESVILLE.

September 5 I went to Noblesville to lecture upon school hygiene and the general prevention of disease before the County Teachers' Institute. Over three hundred teachers were present

and a number of citizens. This is the third time the Secretary has been invited to Noblesville, and he thinks this indicates that the people of that county have become deeply interested in disease prevention work. Much of this interest is undoubtedly due to the work of Dr. F. A. Tucker, who has persistently made known to the public the advantages to be derived from the ounce of prevention. Close attention was given to the lecture, and a resolution of thanks was passed.

**The Britton Schoolhouse.**—This schoolhouse is in Delaware Township, Hamilton County. I visited this schoolhouse to make a survey of the same in company with Dr. F. A. Tucker, September 5.

**Site.**—The site is satisfactory, having good natural drainage but no artificial drainage, which hardly seems necessary.

**Building.**—The building is an old dilapidated frame, stone foundation, no basement, and only one room. This room is 30 x 24 feet. It contains 48 desks and has an enrollment of 17. The floor is bad; ceiling is broken in places, and has fallen off; no cloakroom; heated by stoves; ventilation only by windows and doors; roof is in bad condition. Windows are six in number, three on each side, and furnish sufficient light, but are objectionable on account of cross-lights. The chimney is cracked and rests upon the joists which support ceiling. The chimney is unsafe. Further evidence in dilapidation lies in the fact that the paper is coming off.

**Outhouses.**—These are separate for the sexes, but dilapidated, and in places in awful condition.

**Conclusion.**—This schoolhouse is unfit for school purposes, and I recommend that it be condemned.

#### MONTICELLO.

September 7 I went to Monticello to lecture before the County Teachers' Institute. The meeting was held in the audience room of the high school building. Early in the spring the old high school building at Monticello was abandoned, thus necessitating the construction of a new one. The new building is beautiful, well built, and every attention has been given to sanitary features. The audience numbered over three hundred, and the usual lecture

was received with attention and respect, and the usual vote of thanks was passed, containing a clause expressing confidence in the work of the State Board of Health and approval of what it had done.

#### OTTAWA, ILL.

I visited Ottawa, Ill., September 16, in order to become acquainted with the work being carried on there in the cure of tuberculosis in the Ottawa Tent Colony. This institution was founded three years ago by the Illinois State Medical Society in order to make plain to the people that incipient tuberculosis was curable in the climate of this region. The institution started with three patients, an ordinary frame dwelling for an administration building and an old frame structure for surgical and general purposes. In three years the institution has grown until there is now found upon this beautiful site a large administration building, which cost thirty thousand dollars, and seventy-five tents, all arranged in streets. The site of the colony is on the high western banks of the Illinois River. The view from the administration porches is very beautiful. The winding river and the fertile bottoms to the north and woods and meadows to the south. The grounds are laid out with curved paths and flower-beds, and the shrubbery has been tastefully placed. Dr. J. W. Pettit is the presiding genius, and is aided by Dr. Butterfield. There were fifty-seven patients at the time of my visit, and five nurses. The treatment of the patients is the well known out-door life, with an abundance of plain, well cooked food given at regular intervals and under rational directions.

The bathhouse, which is a separate building, furnishes every facility required in such a building. Life is entirely out of doors, the tents simply sheltering the patients from the dews and rain. At night when they are in bed the flaps at both ends are opened, and the air blows over their faces and their bodies all night. All tents have wooden floors and are very simple and plainly furnished. Dr. Pettit is a master in this work, for he has built up this institution from nothing until it has become known all over the United States as one of the best conducted and most successful of private sanatoriums for consumptives. I secured sets of blanks used at this institution, also took copious notes in regard

to the management of patients and in regard to diet, entertainments, and the various points used in the cure of the disease. This visit was most satisfactory, and the benefit derived can not be expressed in a few words.

#### MADISON.

In conjunction with Dr. Geo. T. McCoy I visited Madison September 20 in order to hold a tuberculosis symposium. The tuberculosis exhibit was carried along, and was shown in one of the rooms of the high school building. Many hundred people visited the exhibit, and Dr. McCoy and myself explained its various features. Addresses were delivered in the afternoon and the evening. In the afternoon the audience was small, but attentive and appreciative. In the evening it was large and overflowing the high school. It is certain that this visit to Madison was attended with good results. Many citizens expressed their approval and offered their services in procuring proper legislation in pushing onward the general health cause.

#### COLUMBIA CITY.

In response to a cordial invitation from the Whitley County Medical Society, I visited Columbia City on September 25. In the afternoon I read a paper before the Society entitled, "The Preparation of Antitoxins, Methods of Purification and Notes Upon Its Administration." The paper was given mostly to a consideration of diphtheria antitoxin. Its history was perfectly reviewed, and its preparation was entered into quite minutely. Special attention was given to the purification and concentration of the remedy as discovered and invented by Dr. Gibson of the New York Board of Health. The notes upon the administration were kindly received and thoroughly discussed. In the evening, under the auspices of the society, a public meeting was held in the Methodist Church, where I gave my usual illustrated lecture upon the prevention and cure of tuberculosis. Close and appreciative attention was given, and a cordial vote of thanks was passed.

## PERU.

On September 26 I visited Peru to deliver an illustrated lecture upon "Tuberculosis; Its Prevention and Cure" before the Y. M. C. A. I was greeted by a large audience, which filled the hall to suffocation. The effort was certainly appreciated, for a unanimous vote of thanks was passed, and several speakers offered congratulations and confidence upon the work which was being done by the State Board of Health.

## RICHMOND.

I went to Richmond September 28 to confer with President Davis and Prof. Sackett in regard to making a sanitary survey of White River. The object of the survey was to determine the degree and amount of pollution which this stream receives, so that authoritative data could be presented to the coming Legislature in regard to the matter.

Upon arrival I first met Dr. Geo. H. Grant, County Health Officer, who expressed himself as highly concerned in regard to the typhoid existing in the city. He reported seventeen cases in September, and at the time of the visit there were eight in the City Hospital. Many mild cases had existed, as was proved by blood examinations made in the State Laboratory. Mr. Barnard, Chemist of the Board, had visited at Richmond and made a survey of the water works, and numerous analyses were made, and his report is inserted herewith. A review of this report shows that the Gorman gallery had certainly received water from the river. Subsequent examinations by workmen discovered a large hole, probably four inches in diameter, leading through the bank, thus confirming the work of the chemist. This hole was stopped up, and appropriate cement walls built along the river's edge at the said gallery. This has completely shut off the river, and analyses since these improvements show the gallery water to be without fault. It is now believed that the Richmond supply is satisfactory in every respect. It is very probable that not a little of the typhoid was spread by the public water; yet it is certain that very many cases were caused by polluted wells. Together with Dr. Grant I visited the homes of six of the patients lying in the hospital with the fever. All of these homes might well be termed

typhoid homes. They all had shallow wells with dirty backyards, and open, reeking outhouses. None of the families were of that degree of cleanliness and neatness which is necessary to keep typhoid at a distance. While two of the patients whose homes were visited might have secured their disease from the public water supply, it is more than probable that they caught it at home.

In the evening, with Dr. Davis, I called upon Dr. Charles Bond, City Health Officer, and there the typhoid situation was thoroughly considered. Reports of the facts obtainable, together with the opinions of several physicians, pointed to the conclusion that the outbreak had passed its height and was now on the decline. It has not been deemed necessary to recommend to the people that the water from the public water supply be boiled, because only one of the galleries was found to be suspicious, and the source of its supply was so quickly corrected.

It was arranged with Prof. Sackett to commence the survey of White River as soon as he possibly could, and he would be paid from the general funds of the Board at the rate of \$250 per month.

#### REPORT OF EXAMINATION OF THE RICHMOND WATER SUPPLY.

H. E. Barnard, Chemist.

In response to a request from Dr. T. Henry Davis, health officer of the city of Richmond, and Howard Dill, superintendent of the Richmond Water Works Company, on August 27, 1906, I visited the various sources of supply, collected suitable samples for chemical and microscopical analysis. The results of the examination are as follows:

The water supply of the city of Richmond is furnished by the Richmond Water Works Company, and consists of a double system, employing both direct pressure on the mains and gravity system with reservoir. The water is taken from two sources, one the Cooper well, so called, and the other a chain of gallery wells sunk along the bank of the East Fork of the Whitewater at varying distances from the river.

#### THE COOPER WELL.

The Cooper well is situated near the center of a natural basin having a watershed two and one-half square miles in area. This watershed is largely cultivated land, and consists of several farms, each with a group of buildings, and has an approximate population of thirty persons and a large number of cattle and hogs. None of the farm yards or buildings are nearer than forty rods, and none are so located that drainage flows

in the direction of the well. The well consists of a large bricked basin covered and protected. The basin is about twenty feet deep and fifteen feet in diameter, and contains normally ten or twelve feet of water. The well is sunk in a bed of gravel overlaid with two feet of black loam. The gravel is fine and the bed evidently covers the entire area of the watershed, and is, in fact, a large natural filter. The well is supplied with water from this gravel bed, a surface or shallow well water derived from the rains falling upon the watershed and modified by slow filtration and oxidation of organic matter. The temperature of the water is nearly constant at 52 degrees F. throughout the year. An analysis of the water shows a normal water containing a small amount of iron, which slowly precipitates when the water is exposed to light and air. Pathogenic and sewage bacteria are absent. The water from the Cooper well flows by gravity through a 16-inch pipe to the pumping station, being carried over the eight feet of elevation at the crest of the basin by a syphon, and there enters a receiving basin, is mixed with gallery water and pumped directly to the mains, the overflow going to the reservoir

#### THE WHITE GALLERY.

The White gallery, so called, is simply a well which extends under the ground horizontally for some hundred feet. It is arched over with brick laid in cement and built upon a stone foundation, and so constructed that water can enter only from the bottom. The gallery is 100 feet from the bed of the river, and derives its supply from the watershed extending above and away from the river for an eighth of a mile or more, and from infiltration from the East Fork of the Whitewater. The analysis of the water shows no pollution whatever. The water is of the same composition as the river water, except that a more complete oxidation has taken place, as is shown by decreased albuminoid ammonia content, the absence of nitrites and increased nitrates.

It is evident that the earth bank, 100 feet or more in thickness, between the gallery and the river is acting as an efficient filter and is removing entirely all of its undesirable characteristics that are present in the river water itself.

#### THE HILL GALLERY.

The Hill gallery, so called, is constructed like the White gallery, being a brick arched gallery 600 feet long, some 150 feet from the bed of the river, which it parallels. The composition of the water is excellent and is identical with that from the White gallery.

#### THE GORMAN GALLERY.

The Gorman gallery, located along the river bed some twenty-five feet from the bank, and the nearest gallery to the pumping station, is constructed like the other galleries. It receives water from the Hill gallery, and under usual conditions delivers a mixed supply. The sample analyzed was taken at the lower end of the gallery after the supply had been cut off from the Hill gallery, and represents as nearly as possible



the water which collects in the Gorman gallery. The composition of the water is very similar to that of the raw river water. The albuminoid ammonia is higher than in the other gallery samples, the nitrates lower; nitrites are present, and the sample examined showed *B. coli* present in both 5 c. c. and 1 c. c. samples. It is evident that the Gorman gallery is receiving water from the river that is not fully oxidized, and that the twenty-five feet of earth between the river and the gallery is insufficient to purify properly the water.

### THE RESERVOIR.

Under ordinary conditions the water service is by direct pressure on the mains, but, as an auxiliary supply, a reservoir is provided with a capacity of 8,000,000 gallons. The reservoir is twenty-five feet deep, covering an area of two acres, and has a cemented bottom and sloping sides built of stone laid up with loose joints. The interstices between the stones are filled with mud and sludge, and afford a foothold for algae and grasses. The composition of the water in the reservoir, as is indicated by the several analyses made of samples collected on different days, is practically constant and is an average of the supplies from the Cooper well and the other galleries. There is a decided increase in albuminoid ammonia and nitrite contents, together with lowered solids and hardness. The increased ammonia contents are due to the presence in the supply of decomposing organic matter, and the lessened solids to the precipitation of iron and calcium salts in the form of sludge, due to the continued exposure of the water in the reservoir to the sun and air. A bacterial examination of the water made on a sample kept at ordinary summer temperature for twenty hours showed but 31 per cc., after forty-eight hours' growth, a very favorable showing indeed. There is a perceptible odor to the water at the reservoir, which becomes pronounced after the water has stood in a closed receptacle or is heated. The odor is due to the decomposition of a plant of the order "characeae," known as "chara." The characeae are plants which occupy an intermediate position between the algae and the higher cryptogams. The plant has a distinct stem, with whorls or branches at regular intervals. These branches are sometimes spoken of as leaves, and at the lower end of the stem assume a root-like form which fastens the plant to the mud and gives it stability. This characteristic of the plant makes it impossible to eradicate it except by taking away its means of support. This can be done by cementing the walls of the reservoir. The characeae injure the water only by rendering it unpleasant to the taste and smell. This species possesses the property of secreting calcium carbonate, and properly serve in a measure to soften the water in the reservoir.

### SUMMARY.

The water supplying the city of Richmond is of excellent quality, free from an excess of organic matter and iron. The water from the Cooper well is slightly harder than that from the galleries, and contains a slight amount of iron that precipitates out on standing.

The White and Hill galleries provide a supply of pure, well-filtered water, probably largely derived from the East Fork of the Whitewater. The filtration is perfect, and the distance between the galleries and the river insures continued efficiency of the intervening earth well as a filter.

The Gorman gallery receives water from the river which has not been thoroughly purified. It is of practically the same composition as the river, containing high albuminoid ammonia, nitrites and the bacilli coli communis. The Gorman gallery is located too near the river, for while all sediment is removed, the filtration is not sufficient to remove pathogenic bacteria, and oxidation of organic matter is not completed as in the case of the other galleries. The reservoir is well located, protected against outside contamination, and, except for the presence of the chara, in good condition. The chara can best be eradicated by drawing off the water, cleaning out the interstices between the stones forming the sides and washing with a strong cement, so that the crevices are filled and no lodgment provided for mud and sediment. It is not necessary to put a cement floor on the side of the reservoir, as has been done to the bottom, as a comparatively inexpensive wash will serve the same purpose.

In enlarging the capacity of the system, water taken from the basin near the Cooper well or from gallery wells located at least 100 feet from the river bank will be entirely satisfactory, free from the possibility of present or future pollution, and of a moderate hardness and well adapted to the uses of a public water supply.

#### ANALYSES WATER FROM SYSTEM OF RICHMOND WATER WORKS COMPANY

	Cooper Well, No. 536.	East Fork, Whitewater, No. 537.	White Gallery, No. 538.	Reservoir No. 539, S. W. Corner.	Reservoir No. 499, N. E. Corner.	Reservoir No. 497, S. W. Corner.	Hill Gallery, No. 540.	Gorman Gal- lery, No. 541.
Ammonia, free.....	.0054	.0098	.0014	.0048	.0014	.0020	.0014	.0010
Ammonia, albuminoid.....	.0040	.0142	.0046	.0132	.0076	.0158	.0040	.0774
Nitrates.....	.0050	.0500	.1500	.0700	.1000	.1200	.1000	.0700
Nitrites.....	.0000	.0015	.00-0	.0015	.0015	.0014	.0000	.0003
Chlorine.....	.250	.275	.250	.250	.250	.200	.300	.275
Iron.....	.0200	Trace.	Trace.	.0000	.0100	Trace.	.0050	.0000
Hardness.....	28.60	22.50	24.20	18.100	20.10	20.10	24.10	22.50
Total solids.....	12.60	34.30	37.30	30.40	37.20	38.50	35.60	32.70
Fixed solids.....	34.60	26.20	26.60	22.80	25.00	25.00	27.20	25.00
Odor.....	None.	None.	None.	None.	°	°	None.	None.
Color.....	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turbidity.....	None.	Mark'd	None.	None.	Slight.	None.	None.	None.
Sediment.....	None.	None.	None.	None.	†	None.	None.	None.
B. coli.....	Absent	Pres'nt	Absent	Absent	Absent	Absent	Absent	Absent
Bacterial count.....				31 per cc.				
Calcium carbonate.....	26.42	22.59	24.99					
Magnesium carbonate.....	11.95	11.35	10.82					

° Decided musty. † Very slight.

#### ROCHESTER.

On October 2, in response to an invitation of the "University Association of Rochester," I visited this place to give my illustrated lecture upon the "Prevention and Cure of Tuberculosis."

I was surprised to be made the honor guest of a dinner by Dr. Shafer, who had invited the physicians of the county to said dinner in his new sanatorium. The occasion was most enjoyable, and the communication with these practitioners of the county was surely beneficial to the public health cause.

In the evening my lecture was delivered in church, that was filled and overflowing. Upon arrival I was unable to get in at the front, and was compelled to enter through a rear door. Mr. Bidder, editor of the Rochester Republican, manipulated the lantern, and among the audience was Senator Stephenson and Mr. Barnhart, editor of the Rochester Sentinel. The superintendent of the schools, the mayor and the president of the Rochester College, with teachers and citizens, were present. A resolution of thanks and approval, also commendation of the work of the State Board of Health was passed.

#### MUNCIE.

On October 8 I visited Muncie to deliver the usual illustrated lecture upon "Tuberculosis; Its Prevention and Cure," before the meeting of the citizens with the State Charities Association. Attorney-General Miller presided, and State Senators Kimbrough and Hendee, together with prominent citizens, were present in the audience. Gen. Miller, as presiding officer, made an address in which he approved and urged others to help in the work of creating a State health farm for consumptives. My lecture was followed with fifteen minute remarks by Dr. Hugh Cowing, Health Officer of Delaware County, and the same time was given to "The Social Aspect of Tuberculosis," by Mr. Fagg, of Evansville. This meeting was a very great success, and doubtless much good was accomplished.

#### MUNCIE.

October 10 I visited Muncie to lecture before the Indiana Federation of Women's Clubs. The lecture was entitled "What Can the Women Do to Help On the Public Health Cause?" The exercises were held in the Commercial Club rooms, the same being crowded to overflowing. The lecture called the attention to the fact that almost one thousand mothers in the ages of eighteen to forty died annually of one disease, and this is a preventable

disease; that their sisters, the women of the State, could certainly do a great deal to bring before the people the importance of preventing tuberculosis. Many of the well known methods now practiced in this work were reviewed and detailed, special stress being laid upon the point that "success lay in education." Resolutions of thanks were adopted on account of the lecture, and expressing confidence and approval in the work of the State Board of Health.

#### DEATHS AND DISEASES DURING THE QUARTER.

Total deaths 8,812. In same quarter last year 8,525. There was more smallpox than in same quarter last year, and fewer deaths, but other infectious diseases show no diminution.

The following table gives the smallpox comparisons:

	No. of Cases Reported.	No. of Deaths.	No. of Counties Invaded.
July, 1905 .....	31	3	6
July, 1906 .....	18	1	6
August, 1905 .....	10	0	5
August, 1906 .....	40	0	3
September, 1905 .....	19	0	8
September, 1906 .....	51	2	10

Typhoid fever seems not to have prevailed as extensively as in the corresponding quarter last year, as the table makes plain:

	No. of Cases.	Counties Invaded.	No. of Deaths.
July, August, September, 1905.....	2,167	74	403
July, August, September, 1906.....	1,633	49	254

In September many letters from physicians spoke of the prevalence of mild typhoid fever, and blood tests in the laboratory have given the Widal reaction in instances where the disease was not suspected.

#### PROSECUTION OF BUTCHERS.

The prosecuting attorney of the Indianapolis district was duly informed of the adulteration of sausages and chopped meats found in the Indianapolis Market. The attorney thereupon began direct prosecution in the Marion County Criminal Court in July, 1906. Fourteen meat dealers were arraigned, their names appearing below in the report of the Chemist. The first case tried was

against Harry Matzke, charged with using sodium sulphite as a preservative and color keeper in Hamburg steak.

The trial attracted much public attention, for the defendants brought expert witnesses from Chicago and other places to testify to the harmlessness of sulphite of soda in food as a preservative. The trial extended over three days, and evidently the jury was not convinced that sodium sulphite was injurious to health, for it stood seven to five for conviction.

Upon consultation with the prosecutors, it was decided that as all the dealers promised not to use preservatives hereafter, that it would be best not to bring the accused to trial, and accordingly the cases were dismissed. Following is the record of the dealers and the articles adulterated.

Food samples collected by H. E. Barnard and Norris Thompson on the East Market in Indianapolis, Indiana, Tuesday, June 19, 1906, with the results of analyses made in the Chemical Division of the Indiana State Laboratory of Hygiene:

Article—Hamburger steak, purchased from A. Stuckmeyer, made by A. Stuckmeyer. Preserved with sodium sulphite, containing .173 per cent. of the same.

Article—Hamburger steak, purchased from F. Filtz, made by F. Filtz. Preserved with sodium sulphite, containing .147 per cent. of the same.

Article—Hamburger steak, purchased from F. W. Hebble, made by F. W. Hebble. Preserved with sodium sulphite, containing .164 per cent. of the same.

Article—Hamburger steak, purchased from William Grund, made by William Grund. Preserved with sodium sulphite, containing .429 per cent. of the same.

Article—Hamburger steak, purchased from Sam Davis, made by Sam Davis. Preserved with borax, amount not determined.

Article—Hamburger steak, purchased from Sam Davis, made by Sam Davis. Preserved with sodium sulphite, containing .226 per cent. of the same.

Article—Hamburger steak, purchased from Steinmetz Bros., made by Steinmetz Bros. Preserved with sodium sulphite, containing .482 per cent. of the same.

Article—Hamburger steak, purchased from Harry Matzke, made by Harry Matzke. Preserved with sodium sulphite, containing .260 per cent. of the same.

Article—Hamburger steak, purchased from Thos. Dietz, made by Thos. Dietz. Preserved with sodium sulphite, containing .101 per cent. of the same.

Article—Sausage, purchased from J. Deschler, made by J. Deschler. Preserved with sodium sulphite, containing .121 per cent. of the same.

Article—Sausage, purchased from Hilgemeier & Bro., made by Hilgemeier & Bro. Preserved with sodium sulphite, containing .106 per cent. of the same.

Article—Sausage, purchased from Steinmetz Bros., made by Steinmetz Bros. Preserved with sodium sulphite, containing .295 per cent. of the same.

Article—Sausage, purchased from Harry Matzke, made by Harry Matzke. Preserved with sodium sulphite, containing .090 per cent. of the same.

Article—Bologna, purchased from F. Filtz, made by F. Filtz. Preserved with sodium sulphite, containing .147 per cent. of the same.

Article—Weinerwurst, purchased from F. W. Hebble, made by Albert Worm. Preserved with borax, amount not named.

Article—Weinerwurst, purchased from Sindlinger Fresh Meat and Provision Co., made by the Sindlinger Fresh Meat and Provision Co. Preserved with sodium sulphite, containing .025 per cent. of the same.

Article—Veal loaf, purchased from Harry Matzke, made by Harry Matzke. Preserved with sodium sulphite, containing .135 per cent. of the same.

Food samples collected by H. E. Bishop and Philip Brodus on the East Market in Indianapolis, Indiana, on Tuesday, June 19, 1906, with the results of analyses as made in the Chemical Division of the Indiana State Laboratory of Hygiene:

Article—Hamburger steak, purchased from Chas. Mock, made by Chas. Mock. Preserved with sodium sulphite, containing .131 per cent. of the same.

Article—Hamburger steak, purchased from W. H. Heckman, made by W. H. Heckman. Preserved with sodium sulphite, containing .501 per cent. of the same.

Article—Hamburger steak, purchased from Fred Wuster, made by Fred Wuster. Preserved with sodium sulphite, containing .026 per cent. of the same.

Article—Hamburger steak, purchased from Geo. Woessner, made by Geo. Woessner. Preserved with sodium sulphite, containing .170 per cent. of the same.

Article—Hamburger steak, purchased from Thos. Castor, made by Thos. Castor. Preserved with sodium sulphite, containing .144 per cent. of the same.

Article—Hamburger steak, purchased from A. L. Heckman, made by A. L. Heckman. Preserved with sodium sulphite, containing .014 per cent. of the same.

Article—Hamburger steak, purchased from E. F. Overman, made by E. F. Overman. Preserved with sodium sulphite, containing .030 per cent. of the same.

Article—Hamburger steak, purchased from Henry Coleman, made by Henry Coleman. Preserved with sodium sulphite, containing .319 per cent. of the same.

Article—Hamburger steak, purchased from J. G. Schilsa, made by J. G. Schilsa. Preserved with borax, amount not determined; preserved with sodium sulphite, containing .015 per cent. of the same.

Article—Hamburger steak, purchased from Joe Cook, made by Joe Cook. Preserved with sodium sulphite, containing .298 per cent. of the same.

Article—Sausage, purchased from H. W. Heckman, made by H. W. Heckman. Preserved with sodium sulphite, containing .160 per cent. of the same.

Article—Sausage, purchased from Geo. Woessner, made by Geo. Woessner. Preserved with sodium sulphite, containing .258 per cent. of the same.

Article—Sausage, purchased from Chas. Weckler, made by Chas. Weckler. Preserved with sodium sulphite, containing .188 per cent. of the same.

Article—Sausage, purchased from Meier-Meuser Packing Company, made by Meier-Meuser Packing Company. Preserved with sodium sulphite, containing .063 per cent. of the same.

Article—Sausage, purchased from Meier-Meuser Packing Company, made by Meier-Meuser Packing Company. Preserved with sodium sulphite, containing .045 per cent. of the same.

Article—Veal loaf, purchased from Joe Cook, made by Joe Cook. Preserved with sodium sulphite, containing .279 per cent. of the same.

Article—Frankfurter, purchased from Meier-Meuser Packing Company, made by Meier-Meuser Packing Company. Preserved with sodium sulphite, containing .050 per cent. of the same.

#### COLLECTED JUNE 23, 1906.

Article—Hamburger steak, purchased from L. Nageleison, made by L. Nageleison. Preserved with sodium sulphite, containing .141 per cent. of the same.

Article—Sausage, purchased from L. Nageleison, made by L. Nageleison. Preserved with sodium sulphite, containing .240 per cent. of the same.

Article—Hamburger, purchased from Henry Coleman, made by Henry Coleman. Preserved with sodium sulphite, containing .054 per cent. of the same.

Article—Sausage, purchased from Henry Coleman, made by Henry Coleman. Preserved with sodium sulphite, containing .076 per cent. of the same.

Article—Hamburger, purchased from Jos. Parent, made by Jos. Parent. Preserved with sodium sulphite, containing .083 per cent. of the same.

Article—Hamburger, purchased from Steinmetz Bros., made by Steinmetz Bros. Preserved with sodium sulphite, containing .068 per cent. of the same.

Article—Sausage, purchased from H. Matzke, made by H. Matzke. Preserved with sodium sulphite, containing .214 per cent. of the same.

Article—Veal loaf, purchased from H. Matzke, made by H. Matzke. Preserved with sodium sulphite, containing .234 per cent. of the same.

Article—Hamburger, purchased from H. Matzke, made by H. Matzke. Preserved with sodium sulphite, containing .194 per cent. of the same.

Article—Hamburger, purchased from Jos. Fischer, made by Jos. Fischer. Preserved with sodium sulphite, containing .039 per cent. of the same.

Article—Hamburger, purchased from Chas. Cherdon, made by Chas. Cherdon. Preserved with sodium sulphite, containing .201 per cent. of the same.

Article—Sausage, purchased from Chas. Cherdon, made by Chas. Cherdon. Preserved with sodium sulphite, containing .075 per cent. of the same.

Article—Hamburger, purchased from William Grund, made by William Grund. Preserved with sodium sulphite, containing .430 per cent. of the same.

Article—Sausage, purchased from Meier-Meuser Packing Company, made by Meier-Meuser Packing Company. Preserved with sodium sulphite, containing .040 per cent. of the same.

Article—Hamburger, purchased from Sindlinger Fresh Meat and Provision Company, made by Sindlinger Fresh Meat and Provision Company. Preserved with sodium sulphite, containing .402 per cent. of the same.

Article—Sausage, purchased from Sindlinger Fresh Meat and Provision Company, made by Sindlinger Fresh Meat and Provision Company. Preserved with sodium sulphite, containing .312 per cent. of the same.

#### INSPECTION OF SLAUGHTER HOUSES.

In July Dr. Davis directed that an inspection of slaughter-houses in the State be made. Accordingly a blank was prepared and supplies of the same sent to all city and town health officers. Of the 390 officers of this class, 351 promptly replied by making surveys of the slaughter-houses furnishing meats in their jurisdictions. Upon review of the records it appears that of 460 slaughter-houses inspected 77 per cent. were exceedingly unsanitary, 16 per cent. passable, and only 7 per cent. in good condition. Some of the terms used in describing the conditions were: "revolting," "horrible stench," "rotting blood and entrails," "indescribably awful," "sickening."

In August letters were sent to the authorities of cities and towns where unsanitary slaughter-houses were reported, calling attention to the necessity of correction. It was recommended that an ordinance be passed excluding meats from any slaughter-house which was not sanitary according to the definition laid down in said ordinance. The ordinance read as follows:



**An Ordinance Regulating the Meat Supply, Prescribing the Sanitary Conditions of Meat Shops, Butcher Shops, Slaughter Houses, Fish Markets, and Public Eating Houses; Prescribing How Meats and Carcasses of Animals Intended for Human Food Shall Be Handled, Empowering Officers for the Enforcement Thereof, and Repealing All Ordinances in Conflict Therewith.**

Section 1. Be it ordained by the Mayor and Council of the City of \_\_\_\_\_, That it shall be unlawful, within the corporation of the City of \_\_\_\_\_, to sell, barter or give away the flesh of any animal intended for human food, which animal has not been slaughtered and the carcass prepared and kept and handled according to the regulations given in this section; and, the carcass of any animal offered for sale for human food within the corporation of the City of \_\_\_\_\_, which has been prepared otherwise than according to said regulations, is hereby declared to be unclean and is condemned as unfit for human food and it shall be the duty of the City Police, and of the City Health Officer and his Deputies, and the power is hereby given to said officers to summarily seize and drench with kerosene oil any animal carcass or parts of a carcass which they may discover within the corporation of said City, when to their knowledge the carcass or parts of a carcass have not been slaughtered, prepared and handled according to said regulations, and, any person convicted of selling such carcass or parts of a carcass shall be fined in any sum not less than twenty-five nor more than one hundred dollars.

**REGULATIONS.**

- (1) The animal shall be absolutely healthy and sound.
- (2) All slaughter houses or abattoirs in which slaughtering is done shall have water-tight, hardwood, asphalt or cement floors, be well lighted, thoroughly ventilated and drained, supplied with an abundance of pure water, windows and doors provided with screens, ceilings, side walls, posts, pillars, partitions, etc., shall be frequently whitewashed or painted, or, when this is impracticable, they shall, when necessary be washed, scraped or otherwise rendered sanitary. When floors or other parts of slaughter houses, abattoirs or butcher shops, as tables, racks, trucks, trays, counters, refrigerators, meat blocks, etc., or other parts of the equipment, are so old or in such a condition that they can not be readily made clean and sanitary, they shall be removed and replaced or otherwise put in a condition approved by the City Health Officer. And, all equipment shall be kept clean and in a sanitary condition at all times.
- (3) All slaughter houses or abattoirs shall be provided with tanking apparatus for tanking and making all offal into fertilizer, which apparatus shall be in rooms separate from the killing rooms, but said tanking apparatus is not required if all offal is buried, cremated, or hauled away for tanking elsewhere. Said slaughter houses or abattoirs shall also be provided with ample cold storage facilities and all carcasses shall, as soon as properly dressed, be placed in cold storage until taken away, or said carcasses may be immediately removed elsewhere to cold storage. Said slaughter houses or abattoirs shall also be provided with proper facilities for rendering lard and tallow, and said facilities shall be in a room devoted exclusively to said purpose.

(4) All employes of said slaughter house, abattoir or butcher shop shall be clean in person, and, when at work shall wear aprons or smocks made of a material that is readily cleansed and kept sanitary, and the same shall be cleaned daily, if used; and spitting upon the floor or urinating thereon or other befoulment is absolutely forbidden.

(5) Said slaughter houses, abattoirs and butcher shops shall be provided with proper facilities for washing hands and also with proper water closet facilities, which shall at all times be kept clean.

(6) Swine shall not be fed on offal at the said slaughter houses, abattoirs and butcher shops, and the surroundings shall be kept clean at all times. The carcasses of swine fed upon offal are hereby declared to be unclean and are condemned and if offered for sale or are given away and are discovered within the corporation of the City of \_\_\_\_\_, the same shall be seized and drenched with kerosene oil, as heretofore set forth and commanded.

All carcasses and parts of carcasses intended for human food, during transportation from the slaughter houses or abattoirs, shall be carefully covered with canvas or white cloth so as to exclude all dust, dirt and flies or other insects, and such canvass or cloth covering shall be kept clean by frequent washings.

(7) It is provided that nothing in this section shall prevent the sale of animal carcasses, or parts of carcasses, or meats, which have been shipped into the City of \_\_\_\_\_, from any other point where the slaughtering houses or abattoirs are subject to inspection by the United States Government; and it is further provided that nothing in this section shall prevent any farmer or other person not regularly engaged in the sale of meats, from selling in said City any surplus meats he may have from his family supply, unless said meats upon inspection prove to be of diseased or injured animals or spoiled, or have been prepared or kept under unsanitary conditions, and in such instances the penalties and disposal as has heretofore been described shall be enforced.

Sec. 2. All butcher shops, meat markets and fish markets within the corporation of the City of \_\_\_\_\_, shall, from the first day of May until the first day of November, be provided with self-closing wire screens to all doors and windows, and said screens shall be close fitting and kept in good repair. Said shops and markets shall at all times be kept clean and free from all foreign and noxious odors, and all blocks and tools used in said places shall be kept clean and free from taints. All meats and fish intended for human food shall be so kept and handled as to not allow dust from the streets to settle thereon.

Sec. 3. Every hotel, restaurant, inn, tavern, boarding house and public eating house within the corporate limits of the City of \_\_\_\_\_ shall be kept clean and free from all offensive or unwholesome substances. Every such hotel, restaurant, inn, tavern, boarding house and public eating house shall, from the first day of May until the first day of October of each and every year, be provided with self-closing wire screens to all doors, windows and other outside openings, and all such screens shall be close fitting and kept in good repair so as to exclude flies and other insects. The kitchen connected with any such place shall be kept clean, well ventilated and well lighted and in a sanitary condition. The tables,

table linen, dishes, cooking utensils and all other articles used in and about such place shall be kept thoroughly cleansed and free from all taints and foreign odors. All persons employed in or about any such place shall keep themselves and their clothing clean. All parings, refuse, vegetables, fruits, meats and other waste matter, together with all slops, shall, within a reasonable time, be promptly removed from within such hotel, restaurant, inn, tavern, boarding house or public eating house, and deposited in the proper receptacle outside the building occupied by such establishment. All cellars and other places used by any such establishments as places for storage for fruits, vegetables, meats or other articles intended for human food shall be thoroughly disinfected whenever required by the Board of Health of said City, and shall be kept clean and free from all decayed matter of every description; and every such cellar or place of storage shall be so constructed as to exclude rats, mice and other vermin. All such hotels, restaurants, inns, taverns, boarding houses and public eating houses shall be subject to inspection by the Board of Health of said City at any and all times during business hours, and it is hereby made the duty of the members of said Board and of each of them, to make frequent inspections of all such places and to promptly enforce the provisions of this ordinance.

Sec. 4. It shall be unlawful for the proprietor or manager of any hotel, restaurant, inn, tavern, boarding house or public eating house within the corporate limits of the City of \_\_\_\_\_, either in person or by or through any employe, to serve to any customer or patron any watered milk, or any milk which has been "skimmed," or from which any of the cream has been taken before the milk is so served, unless there shall be posted in a conspicuous place in such public eating house a card stating in the English language that the milk served in such place is skimmed milk. And it shall be unlawful to place any preservative in any milk served to any customer or patron of any such place. All milk and butter intended to be served to customers and patrons of any such hotel, restaurant, inn, tavern, boarding house or public eating house shall be stored in some clean wholesome receptacle, separate and apart from all meats, fish, fruits, vegetables, and where it will not come in contact with the odors arising from the kitchen, or other odors of an injurious nature. The proprietor or manager of every such hotel, restaurant, inn, tavern, boarding house, or public eating house, shall, upon demand, deliver up to the Food Inspector of the City of \_\_\_\_\_, samples of the milk served to customers or patrons of such place, and it is hereby made the duty of said Inspector to make analyses of such milk and to file with the Common Council, once each month, a written report of the analyses.

Sec. 5. Any person, persons, company or corporation violating any of the provisions of this ordinance shall, upon conviction thereof, be fined, except as otherwise herein provided, for each offense, in any sum not less than one (\$1.00) dollar nor more than fifty (\$50.00) dollars, and each day's violation shall be deemed a separate offense.

Sec. 6. This ordinance shall take effect and be in force from and after its passage and publication once each week for two consecutive weeks in the \_\_\_\_\_, a daily newspaper printed and published in said City of \_\_\_\_\_, Indiana.

Very few replies to our "ordinance letter" were received, but it has been learned that several cities and towns passed the law either entire or modified. Among these places are Newcastle, Monticello, Auburn, Warsaw, Marion, Logansport and Sullivan.

**THE SECOND ANNUAL MEETING OF THE NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.**

Washington, D. C., May 16-18, 1906, Reported by Geo. T. McCoy, M. D.,  
Member of the Indiana State Board of Health, Columbus, Indiana.

To the President and the Members of the Indiana State Board of Health:

Gentlemen—As your representative I attended the second annual meeting of "The National Association for the Study and Prevention of Tuberculosis," which convened in Washington, D. C., May 16, 1906.

The first meeting was held in conjunction with the Association of American Physicians, and was addressed by Dr. Simon Flexner, of New York, on the subject of "Immunity in Tuberculosis." The meeting was presided over by Dr. Frank Billings, of Chicago. There were 500 delegates present at this first meeting, showing the interest the public is taking in the crusade against tuberculosis. Dr. Edward L. Trudeau, of Saranac Lake, New York, also addressed the meeting, detailing some of his results in preventive inoculation among animals. Dr. Trudeau was encouraged from his success to predict that the same results would ultimately be accomplished in treating human beings.

The general attendance of the meetings was something less than the first meeting, in 1905, but the character of the papers presented was beyond the standard then obtained.

The scientific work this year was grouped in five sections, two new ones (surgery and tuberculosis in children) having been added.

Many important and timely subjects were discussed. "Tuberculosis Nostrums" was the title of a characteristic paper by Samuel Hopkins Adams, of New York. He finds cause for the encouragement in the fact that the whole matter of nostrum control is under adjustment. Patent medicine bills have been agitated in many State Legislatures and the press of the country is taking a more commendable stand upon the subject.

"Three Cases of Placental Tuberculosis," illustrated by lantern slides, was the subject of a very interesting paper by Dr. Alfred Scott Warthin, of Ann Arbor. In the discussion Dr. W. H. Welch, of Johns Hopkins University, stated that the evidence is becoming stronger and stronger that conveyance from mother to fetus is at least not so very extraordinary, and is probably far more frequent than is commonly supposed. Twenty cases of placental tuberculosis have been reported. Dr. Welch regards the question of placental lesions as a subject of really fundamental importance in the etiology of tuberculosis. That tuberculosis in the new born does not more frequently develop has been explained in two ways: first, that the bacilli get in late, and hence there is no time for tuber-

culosis to develop; and, second, that the fetus is relatively insusceptible. The fetal blood may be filled with tubercle bacilli, and no localized lesion be developed. There is abundant evidence to show that the fetus may harbor tubercle bacilli for weeks without the development of lesions.

"The Serum Diagnosis of Tuberculosis" was presented by Drs. Kinghorn and Twitchell, of Saranac Lake. The results of their experiments seem to show that it is not a specific sign of the presence of tuberculosis, and that it is of no value in the early diagnosis of the disease. ("The Serum Prognosis of Tuberculosis" is attracting much attention, and is likely to become a valuable aid to the clinician.) The same may be said of the Opsonic Index of Wright and Douglas, especially in its relation to the treatment of tuberculin.

"The Therapeutic Use of Tuberculin Combined with Sanatorium Treatment of Tuberculosis" was the subject of an exhaustive report by Dr. Trudeau, in which he presented a summary of the impressions gained from its use at Saranac Lake since 1890. Tuberculin is a powerful agent and must be used with care. Fever reaction is not necessary, and every effort should be made to avoid its production; hence very minute doses are to be used in the beginning. The danger from tuberculin lies wholly in its faulty administration. Six months are almost always necessary for the treatment, and in many cases a year would be better. The reaction of the patient is of more value in determining the dosage than is the Opsonic Index. As a result of his experience Dr. Trudeau still holds to the opinion formed years ago, namely, that tuberculin aids in the sanatorium treatment of tuberculosis, but he regrets that there is no standard strength for the preparation, and that there is so little known positively about the action and the strength of the dose that would give the best results. Therefore its use must be left largely to the skill and judgment of the physician in each individual case.

One of the most important sessions was that devoted to "Tuberculosis in Children." A number of valuable papers were presented in this section, and the discussions were the most spirited of any during the entire meeting. In the absence of Dr. A. Jacobi, Dr. David Bovalrd, of New York, presented the subject of "Sources of, and Portal Entry of, the Infectious Agents in Tuberculosis of Infants and Young Children." Dr. Bovalrd has had a large experience in autopsies on children, and was well qualified to speak of the sources of infection as displayed in post-mortem findings. He said that while there were records of cases of local infection, tuberculosis of the skin, bones, the eye, etc., where there was no doubt that the infection came from contact of tuberculosis material with the part affected, they are so rare as to form an almost negligible quantity in the general consideration of the subject. The results of autopsies showed that infection came almost solely from two sources, the inhalation of the tubercle bacilli, or its ingestion with food. In this connection it is remarkable how few cases of intestinal tuberculosis are found even when the lungs are seriously affected, and where the patient must have been swallowing millions of tubercle bacilli every day. Reasoning from this standpoint, the drinking of milk from tuberculosis cows is not attended with very grave dangers, but the apparent protection of the intestinal glands in those having the disease in the lungs, may not extend

to the non-tubercular. He did not advocate any relaxation in the stringency of milk laws on this account. Tuberculosis of the intestinal tract is much more common among children in English, German and French hospitals than in American hospitals.

"Protection of Infants and Young Children from Tuberculosis" was the subject of a paper presented by Dr. John Lovett Morse, of Boston. This is an exceedingly difficult problem, especially in the crowded environment of tenements, and after such diseases as measles, whooping cough and influenza. The danger of infection of the children is greatest on account of their association with tuberculous parents. The parent should not be allowed to keep and handle the child; they should be separated at the earliest possible moment if the child is to escape infection. The establishment of as many playgrounds and places of outdoor exercise and entertainment as is possible should be urged upon those in authority, the results largely depending upon the amount of money that the public is willing to spend in its campaign of education and in making provision by means of sanatoria and other institutions for the care of less fortunate individuals.

Surgeon General Wyman addressed the Association in its last session on the methods employed by the Government for the prevention of the spread of consumption among Government employes. General Wyman related that in accordance with the resolution passed by the Association last year, the President had appointed boards of inquiry to determine the best method to be followed in the sanitation of public buildings, and the conduct of the employes in relation to tuberculosis. Under the terms of the executive order the public buildings under the War and Navy Departments will be inspected by boards of medical officers appointed by the respective Surgeons General of these two departments. All other public buildings will be inspected by boards appointed by the Surgeon General of the Public Health and Marine Hospital Service. The reports of these boards will be made under two distinct heads: first, unsanitary conditions immediately remediable; and, second, unsanitary conditions requiring structural changes. A start has been made in the City of Washington, and with the experience gained there the inspections will be gradually extended throughout the United States. The organization of this great work, as outlined above, has been most carefully considered, and it is confidently expected that great good will result.

In the absence of Dr. Herman Biggs, President of the Association, the annual address was delivered by Dr. Lawrence F. Flick, of Philadelphia, Vice-President. Dr. Flick spoke of the good work accomplished by the Association during the past year, prominent among which is the establishment of tuberculosis exhibition meetings throughout the country, and the bringing to this country the "International Tuberculosis Association" in 1908. The local exhibitions held in a number of cities of the country during the past winter accomplished a great deal of good in educating the people. The program is to be extended to other cities and towns. The advisability of establishing permanent exhibitions in the large cities is to be considered. For the Congress he urges the raising of a fund of \$100,000 for expenses, and the early opening in Washington City of an office for arranging the details of the meeting. Dr. Flick asserted that

the strength of the National Association lay in the fact that its ambition to eradicate consumption could be gratified. He advocated the establishment of hospitals, sanatoria, convalescent farms, public dispensaries, where the poor could be served, and the scientific care of the afflicted in their homes. He with others criticises the medical schools for turning out graduates unacquainted with the best methods of diagnosis, and the best means of combating the disease. To create a more widespread interest in the subject of the prevention of tuberculosis, he recommended the establishment of a lecture bureau, providing speakers to visit every part of the country, and disseminate knowledge of how to combat the disease successfully.

The emblem of membership of the National, State and Local Tuberculosis Associations was declared to be the double red cross.

It would be impossible in a report of this kind to more than mention the many excellent papers presented, and the earnest discussions following the reading of each paper. One must have been there to appreciate the great work accomplished at this meeting. The attendance at each session was remarkably good, and the best of attention was given to the reading and discussion of papers. The coming and going of members during the reading of papers, that is often so annoying at large meetings of this kind, was not noticed.

Besides the pleasure of listening to the reading and discussion of papers, the mingling with the delegates and listening to the words of wisdom from the lips of the great men in the profession in quiet conversation was a pleasure that one can scarcely forget. The whole meeting seemed to be pervaded with an atmosphere of earnestness and deep learning.

It was with much chagrin that your representative noticed the marks of evident surprise upon the countenances of inquiring members when the statement had to be made that the great State of Indiana, one of the foremost States of the Union, had no plan to care for her unfortunate consumptives.

Ordered, That Secretary's report be spread of record.

#### PETERSBURG SCHOOLHOUSE.

After full consideration of the report of sanitary survey of the Petersburg Schoolhouse as presented in the Secretary's report, the following proclamation was adopted:

#### PROCLAMATION.

Whereas, It is satisfactorily proven to the State Board of Health that the schoolhouse at Petersburg, Pike County, Indiana, is unsafe and very unsanitary; therefore it is

Ordered, That said schoolhouse is condemned as unfit for school use and purposes, the said condemnation to be in effect on and after June 1, 1907, and all school authorities and all teachers are commanded under pain of prosecution not to use said schoolhouse for school purposes on or

after said date, June 1, 1907. Unanimously passed this 12th day of October, 1906, in regular session of the Indiana State Board of Health, all members being present.

Attest: .....Pres.  
 .....Secy.

#### NEW BRITTON SCHOOLHOUSE.

After full consideration of the report of sanitary survey of the Britton Schoolhouse, as appears in the Secretary's report, the following proclamation was adopted:

#### PROCLAMATION.

Whereas, It is satisfactorily proven to the State Board of Health that the schoolhouse known as the New Britton Schoolhouse, situated in Hamilton County, Delaware Township, Indiana, is old, dilapidated and unsanitary; therefore it is

Ordered, That said schoolhouse is condemned as unfit for school uses and purposes, and shall not be used for school purposes after this date, October 12, 1906. And any school authority, teacher or other person or persons who shall violate this condemnation order shall be prosecuted as in the statutes provided. Any person who tears down, mutilates, disfigures or destroys this card without due authority from the State Board of Health shall be prosecuted.

Passed this day, October 12, 1906, in regular session of the Indiana State Board of Health, all members present.

Attest: .....Pres.  
 .....Secy.

Ordered, That the Secretary subscribe for the clippings as furnished by the United Press Association of Indianapolis at the rate of \$5 per month until January 1, 1907.

DR. T. VICTOR KEENE.

The President read the following letter:

Dr. T. Henry Davis:

Dear Sir—I hereby tender my resignation as Superintendent of the Laboratory of Hygiene, to take effect November 30, 1906, as it is my intention to re-enter the practice of medicine.

Very respectfully,

T. VICTOR KEENE.  
 September 24, 1906.



After due consideration of Dr. Keene's resignation the following resolution was adopted:

Resolved, That the resignation of Dr. T. Victor Keene, as Superintendent of Laboratory of Hygiene, to take effect November 30, 1906, be accepted, and in accepting said resignation the Board wishes to convey to Dr. Keene its sincere thanks for the very competent way in which he has conducted the work of the Laboratory and that its best wishes for his success go with him in his future work.

The following letter from Lederle Antitoxin Laboratories was read:

October 5, 1906.

State Board of Health, Indianapolis, Ind.:

Gentlemen—We beg to submit the following proposition for supplying the local Boards of Health throughout the State of Indiana with diphtheria antitoxin for the free treatment of those in the State too poor to otherwise procure antitoxin. This is the same plan that is now in force in Ohio and which is working out very satisfactorily there.

We are sending you, under separate cover, by mail, a package of antitoxin as we prepare it for the Ohio State Board of Health. You will notice we have a special label for them. We enclose herewith a clinical report blank, one of which is enclosed in each package of antitoxin shipped to the Ohio State Board of Health. We propose to prepare the packages for your State Board in the same manner as we prepare those for Ohio. We will ship you a stock of the various doses required, 1,000, 2,000, 3,000, 4,000 and 5,000 units, together with memorandum sheets in triplicate similar to the set enclosed marked number one. Upon shipment of a lot of goods to any Board of Health in your State one of these blanks properly filled out should be mailed to us, another to the Board of Health, and the third copy kept for your own file. Upon receipt of this memorandum we will forward bill for the goods from this office and take care of the account in future.

It is not customary with us at the figures we quote on these goods to exchange them, but in order to promote the use of antitoxin we will permit the return to you of unused antitoxin by your local boards within a period of thirty days from its receipt. This gives the local board ample opportunity to know whether there is likelihood of the remedy being required and at the same time permits of the antitoxin being used in another locality, as during the period named its efficiency has not been affected. We enclose blanks, marked set number two. Upon receipt of any return goods from a local Board of Health you will have a set of these blanks filled out, mailing one to this office, keep one for your file, and the third send to the local Board of Health. Upon receipt of this blank we will charge your stock account with the amount of goods you have reported received from the local Board and will credit the account of the local Board with the necessary amount.

From time to time you may order from us such stock as may be required to keep your own in good condition, making a point, however, of always shipping your oldest stock first. At the end of each month a stock statement will be rendered you from this office. This will be made up of all the stock shipped you during the month, plus such as you have received from local Boards less such as our memorandums show has been shipped from your office to Boards of Health. The balance shown on this statement should agree with your stock on hand at the end of the month. This you can have checked up and return to us with your O. K.

We will supply this antitoxin to the Boards of Health throughout your State at the following prices:

1,000 units.....	\$0 75
2,000 units.....	1 25
3,000 units.....	1 75
4,000 units.....	2 25
5,000 units.....	2 75

We will pay any transportation charges on these goods to your office and also such expenses as you may have in shipping the goods to local Boards of Health. Each week or month, as you prefer, a bill of expense for transportation charges may be furnished us.

We enclose a copy of a circular which Dr. Probst used in instructing the Boards of Health in his State concerning the arrangement he had made with us. You may find some suggestions in this that you will care to make use of.

We believe that we have covered fully the plan as is at present in operation in Ohio, and should you have any suggestions which you feel will promote its better working out in your State, we shall be glad to entertain them. We believe we can have this plan in operation within a week or ten days after receiving a favorable report from your Board.

Very truly yours,

LEDERLE ANTITOXIN LABORATORIES.

By L. D. Bell, Secretary.

After consideration the Lederle letter was laid upon the table for the present.



**FIRST**

**ANNUAL REPORT**

**OF THE**

**State Laboratory of Hygiene**

**Year Ending October 31, 1906.**

There are two Departments:

**Department of Bacteriology and Pathology.**

**Department of Chemistry.**



REPORT  
OF  
The Chemical Department  
LABORATORY OF HYGIENE

---

Year Ending October 31, 1906

---

H. E. BARNARD, B. Sc.,  
*Chief of Department of Chemistry.*

H. E. BISHOP, B. Sc.,  
*First Assistant Chemist.*

NORRIS THOMPSON,  
*Second Assistant Chemist.*

# FIRST ANNUAL REPORT OF THE WORK OF THE CHEMICAL DEPARTMENT OF THE LABOR- ATORY OF HYGIENE.

---

By H. E. BARNARD, B. Sc.

At the opening of the chemical department of the laboratory several fields for investigation were waiting, each one of which deserved immediate attention. The public and private water supplies of the State, hitherto unguarded and uncontrolled by other than local watchfulness, were in great need of inspection, and the food and drug laws, which had been on the statute books in one form and another for many years, and which had never been put into operation because of lack of facilities for the necessary laboratory work, were waiting enforcement. The question of pure water is primarily one of health, that of pure foods and drugs is concerned both with disease prevention and the suppression of economic fraud. The health and wealth of citizens are each equally to be safeguarded.

The chemical laboratories were, therefore, equipped for both lines of work and separate rooms fitted up, one for water and one for food and drug analysis. This division was made necessary because of the impossibility of making water analyses in a laboratory used for other work. The division of effort thus outlined has operated admirably in practice. The laboratories, though devoted to entirely different uses, are so arranged that work can be carried on in each simultaneously by the same corps of chemists.

During the year Harry E. Bishop, B. Sc., Assistant Chemist, has had charge of most of the work of the water laboratory and of the department in the absence of the chemist. He is a skilful and resourceful analyst and has filled the position with entire satisfaction. Since the first of January Norris Thompson has been on the analytical force and has done much valuable work in connection with food and drug analyses. During the summer months Jack Hinman assisted in the food laboratory, and although he was drawing no salary for his services he did much work that is to be

commended. To Mrs. E. T. Coney, clerk of the department, is due much credit for the conscientious and thorough manner in which she has performed the work of the office.

But little attempt has been made to enforce the food law through the courts. In November, 1905, several cases involving the sale of adulterated milk were presented to the Grand Jury of Clark County, but since it was impossible to prove the knowing violation of the law necessary under the present statute no indictments were returned. Milk cases were also brought in a justice's court in Terre Haute, but it was impossible to convict the defendants for similar reasons. In June of this year a number of cases were brought against dealers in meats in the city of Indianapolis who were selling products preserved with antiseptics in violation of the food laws. One case only came to trial, that of the State vs. Matzke, before the Criminal Court of Marion County. The case involved the necessity of the State proving the drug employed to be poisonous, a fact well established by elaborate investigations of the United States Department of Agriculture and physiological experts, but not easily shown except by expensive expert testimony. The jury was unable to agree as to the verdict to be rendered and no further steps have been taken to dispose of the case.

The experience gained in these few cases is sufficient to show the need of some changes in the present food law that will make it possible to punish violations by fine and imprisonment whenever such measures seem necessary to secure a proper observance of the law.

In the following report is summarized the result of a year's work. Special studies have been made of the public water supplies, private supplies, cistern and deep well waters in the water laboratory, and of many cases of foods and drugs in the food and drug laboratory.

## THE PUBLIC WATER SUPPLY.

When this country was entirely agricultural, and the population widely scattered, the family water supply was of necessity the farmhouse well; but as the crossroads settlement grew to a village and with the passing years attained a city's attributes, the well became



unsafe and the supply inadequate. Water became more and more a necessity; the few gallons that sufficed for the daily needs of the early settler would no longer satisfy the householder, who must have running water in kitchen and bathroom, sewer connections and lawn sprinklers. So public water supplies were sought and built either by private capital or public funds. Many cities and towns built their own water systems and sold the service at cost to the consumer; many other supplies were constructed by companies or corporations looking for profitable investments. The service has extended until at present there are but few communities that do not have a water supply. Fire protection alone makes an adequate supply a necessity even where the water is not employed for domestic uses. With the rapid development of public water systems, there has not always been manifested the wisdom in a selection of a source of supply that is desirable. To the early settler, water was water, a fair conclusion where there could be no pollution; so it was that the first corporations building reservoirs and sinking wells consulted primarily the cost of installation and but secondarily the character of the supply. That policy did provide water-works, but as the years have passed by, one system after another has been abandoned at heavy loss and new ones constructed.

The water supply, furnishing as it does water for drinking and domestic purposes, becomes an important factor in determining the health of a community. Indeed it is the most important of all the agents which administer to healthful life. Certain diseases are largely water borne, particularly diseases of the intestinal tract, such as cholera and typhoid fever, and the quality of water supplied to perhaps 90 per cent. of a town's population, is of first importance. This is realized more and more and the consumers today refuse to drink water that a few years ago was used without the slightest fear. Whenever typhoid fever is reported in a community, the water supply, whether it be from a well or the public main, should at once be brought under suspicion. And more than that, the water supply should be investigated before fever breaks out. It is not enough to lock the stable door after the horse is stolen, though that practice is the one usually followed. Water supplies should be constantly subjected to rigid inspection. Their source should be of known purity,

and every condition surrounding the distribution of the water such that contamination is impossible. It is the province of the health boards to control the water supply of cities and towns. Their powers in this direction are almost unlimited. The so-called police powers of common law which give them the authority to protect the public health, authorize every action that may tend to prevent disease.

A prominent feature of the work of the Laboratory of Hygiene is to assist local health officers in determining the character of the local water supplies. But before satisfactory and reliable assistance can be given, a thorough knowledge of conditions is necessary, and, therefore, one of the first steps in our work was to obtain a full report of the various public supplies of the State. In order to obtain this information the following blank was sent to every health officer and superintendent of water companies:

#### PUBLIC WATER SUPPLY.

Town or City.....County.....  
 Does your town own or operate a public water supply?.....  
 Are there any private companies supplying water for public use?.....  
 If so, give corporate name of such.....  
 .....  
 When were the works built and by whom?.....  
 .....  
 Is the source of supply a pond, stream, spring, or well?.....  
 If from a pond, state area, average depth, kind of bottom, etc.....  
 .....  
 Give approximate area of watershed; wooded or cleared land; and number of inhabitants thereon.....  
 .....  
 Are the shores of the pond frequented by picnic parties, or occupied by summer cottages?.....  
 .....  
 If from a stream, give approximate volume of water flowing under normal conditions.....  
 Does the stream receive any sewage or waste from manufacturing operations above the intake of the supply?.....  
 If so, state approximate amount.....  
 If from springs or wells, give depth, quantity of water flowing, character of soil, subsoil, and underlying strata, etc. Are wells bored, driven or dug?.....  
 .....  
 .....  
 .....

Is the water supplied by gravity, or pumped to standpipe or reservoir?....  
 .....  
 If standpipe, give capacity; if reservoir, give capacity, area and depth....  
 .....  
 Does the supply ever develop an unpleasant odor or taste?.....  
 If so, of what character?.....  
 Is the supply a soft or hard water?.....  
 How many miles of distributing mains are in use?.....  
 What kind of pipes are used for the mains?.....  
 What kind of pipes for service pipes?.....  
 What is the average daily consumption in gallons?.....  
 Has the water ever been analyzed? If so, by whom and when?.....  
 .....  
 State percentage of population using public water supply.....  
 State number of families using the supply described.....  
 Are there many private wells still in use within the radius reached by the  
 public supply?.....  
 .....  
 (Signature) .....  
 (Postoffice address).....  
 (Date) .....  
 REMARKS. (Here give any facts or information relating to the subject  
 not incorporated in above answers).....  
 .....  
 .....

From the records obtained, the following figures concerning the public water supplies of the State of Indiana are compiled. One hundred and forty-one cities and towns are provided with water systems; 84 cities and towns own their own supply; 51 are under the control of private corporations. The ownership of six other small supplies could not be determined. Seventy-five systems are supplied with driven wells; 9 small systems employ dug wells; 7, springs; 3, flowing artesian wells over 1,200 feet deep; 29 supplies are obtained from rivers, of which the Ohio supplies 5 cities, the White River and forks 5, and the Wabash 2. All of these river supplies receive sewage in large quantities, and but three of the systems depend upon filtration to purify the water. It is evident that this unsanitary condition will eventually result in serious epidemics. Ten supplies are from lakes, Lake Michigan furnishing the water for four cities. All of these cities empty their sewage into the lake and occasionally complain that the water supply is polluted. Ninety-three of the supplies are gravity systems, while 41 are operated by direct pressure upon the mains; 56 systems have standpipes and 31 reservoirs as storage basins.

Nine of the supplies are filtered either by the slow sand filtration process or after chemical treatment. Nine of the supplies are used wholly for fire and hydrant purposes and are not used for drinking. Six of the supplies are reported as bad, one as sometimes bad, and one fair. The rest of the supplies, in the opinion of the informers, are of good quality. One thousand, seven hundred and thirty miles of distributing mains are in use; 1,711 miles of these are of cast iron and 19 miles of wood. Eight hundred and ninety-one thousand people use the water from public supplies for drinking purposes, while 1,757,000 people are wholly dependent upon private wells for their water; or two-thirds of the entire population of the State depend upon the private supply, while one-third uses public waters. A reasonable estimate allows one well to every five persons. There are, then, 351,000 wells in use in this State, the majority of which are so located as to be liable to pollution by household and by barnyard sewage.

It is of course impossible for the State Board of Health to examine all these private wells. It can, however, exercise a rigid control over the purity of the 141 public systems and as well, through the aid of local health officers, condemn annually a large number of the polluted private supplies.

Of the 141 supplies of the State which furnish the water for 891,000 inhabitants, or 33.3 per cent. of the population, we have been able to obtain information as to the sanitary character of but 41 systems. It is the desire of the Laboratory to develop eventually a system of inspection that will record at least four times a year the sanitary condition of every public water supply in the State. In no other way can the public health be safely guarded and purity of the water supply be assured.

Three factors determine the value of a water supply: First and of most importance is freedom from disease germs; second, the supply must be so abundant that it will furnish sufficient water to check the most extensive fire; and, third, it must be of a character that adapts it for use in domestic economy, such as for toilet and laundry purposes, and for industrial use in boilers and as wash-water in mechanical operations. The water which most clearly satisfies these requirements is a so-called surface water, water which falls to the ground as rain, and flowing over uninhabited areas, collects in natural basins as lakes or rivers. The

water as it reaches the earth is as pure as it is found in nature. As it flows over the surface of the ground it dissolves mineral matter from the rocks and soil and takes up organic constituents from decayed leaves and grasses. When it reaches a resting place in a natural basin, all suspended particles are gradually precipitated and the chemical action of light and air rapidly oxidizes and destroys the dissolved organic material accumulated in the rush through forests, over meadows, stony pasture lands and cultivated fields.

Surface water supplies are usually soft and palatable, and whenever properly protected against pollution furnish the safest of potable waters. The water supplied New York, Boston and Chicago is of this class.

When surface water reaches a river it flows rapidly away from its origin and is exposed to all forms of pollution. Rivers have wrongly enough been considered the sewers of industrial activities rather than arteries bearing the great necessity of life, and they are continually subject to contamination. They receive the untreated and unpurified sewage of cities, and the offal of manufacture, so that in an unpurified state, river water is no longer to be considered suitable for public supply. When no other supply is obtainable it is possible to so purify a sewage laden stream that it again becomes suitable for consumption. The process of purification removes disease germs as well, and depends upon sedimentation, filtration, nitrification and oxidation of organic matter to accomplish this. Some river waters like the Ohio and Missouri carry large quantities of silt, silica in suspension, that it is with great difficulty removed by filtration. If given time, however, the silt subsides and as it precipitates it carries down with it most of the injurious bacteria, and the water so purified again becomes suitable for use. Other waters are more advantageously treated by allowing them to flow onto beds of sand and gravel through which they slowly percolate. Gross impurities remain on the top of the filter, while organic matter, bacteria, etc., passing slowly over the surface of the grains of sand as a thin film, is subjected to the action of countless millions of so-called nitrifying bacteria and is changed from its organic to an inorganic and harmless state. The slow sand filtration system of purification is employed with much success by many cities of this country. Lawrence, Mass., was one

of the first cities to adopt the system on the heavily polluted Merimac River water. In 1890, before the installation of the filter, the typhoid death rate was 123 per 100,000; after the filtration system was placed in use there was a rapid decrease in the death rate until in 1903 it was but 33 per 100,000.

The deep well supply is very popular with many cities and water companies. Deep well waters, that is, waters that come from strata lying in or below an impervious layer of stone or clay, in this State the limestone formations, are not liable to be contaminated by sewage and are more easily obtained and distributed than surface waters which have to be brought miles from their source or purified at great expense. Deep well waters are not desirable as public supplies for several reasons. In the first place the supply is always limited. If the watershed is large or if the wells are sunk in a valley which conveys underground waters flowing off an extensive watershed, the supply may be ample. But if the watershed is not large, the supply of water underlying it will be limited, and no number of wells can obtain the necessary amount of water. It is inevitably the case that the deep well system gives out as the demand increases. Deep well waters are usually hard and frequently contain much iron. Hard waters are not desirable for domestic or laundry purposes, and when used for making steam, have to be "broken" or softened before they are suitable for use. The deep well supplies now in use in Indiana are for the most part furnishing a safe water at the present time, and some of the systems are supplied with an abundance of water. But as far as the majority of the systems are concerned, it is inevitable that sooner or later the supplies will prove inadequate.

The composition of the public waters of Indiana, as determined by analyses made during the past year, is illustrated by the following tables:

# WATER SUPPLIES

## INDIANA

### 1906

683 TOTAL NUMBER SUPPLIES EXAMINED

207 DEEP WELLS

380 SHALLOW WELLS

27 CISTERNS

26 SPRINGS

18 STREAMS

8 PONDS

10 GALLERY WELLS

8 MISCELLANEOUS

## QUALITY OF SUPPLIES

683 TOTAL NUMBER SUPPLIES EXAMINED

336 GOOD

260 BAD

87 DOUBTFUL

# WATER SUPPLIES IN INDIANA

## PUBLIC SUPPLIES

1906

145 TOTAL NUMBER EXAMINED

57 DEEP WELLS

19 STREAMS

8 PONDS

40 SHALLOW WELLS

10 GALLERY WELLS

3 SPRINGS

8 MISCELLANEOUS

## PRIVATE SUPPLIES

542 TOTAL NUMBER EXAMINED

150 DEEP WELLS

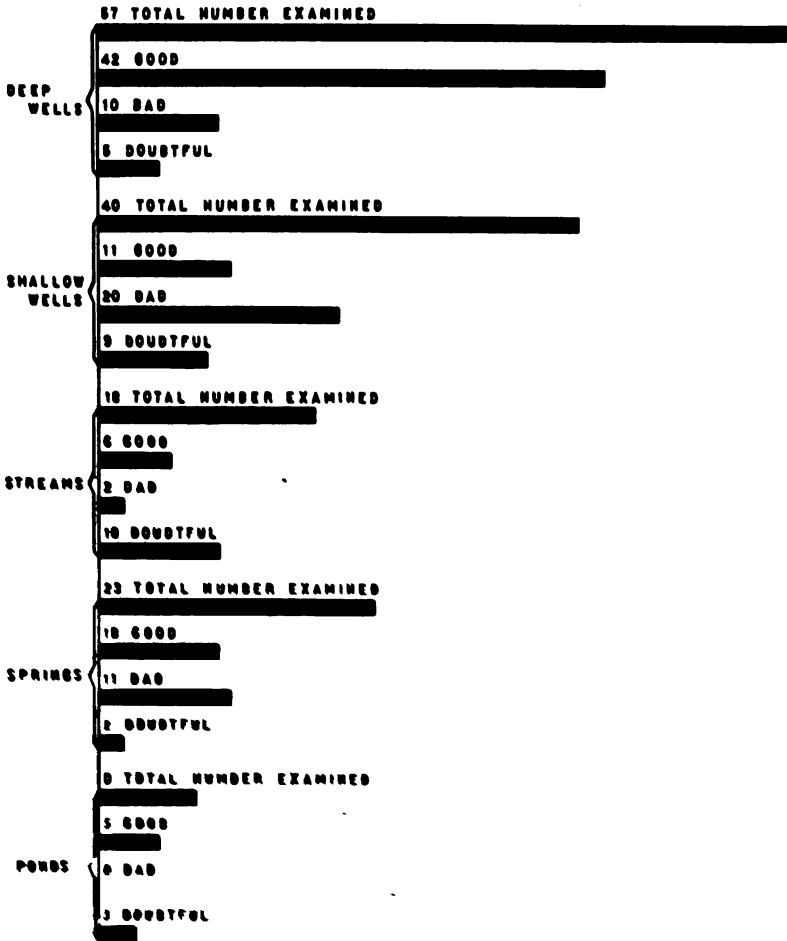
342 SHALLOW WELLS

27 CISTERNS

23 SPRINGS



# CONDITION OF PUBLIC WATER SUPPLIES IN INDIANA 1906



In all, the water from 146 public supplies has been analyzed, and of this number 74 supplies were of good quality, 43 were bad, and 29 were of such character that they were classed as doubtful. Most of the bad waters were taken from shallow or driven wells located in the public square or by the side of the street where they were exposed to all sorts of pollution. In order to better illustrate this point we have made another classification based on the source of the sample. Of the 57 deep or subsurface waters used as public supplies, 42 were entirely free from pollution, ten were classed as bad, and five were of doubtful quality. Several of the bad and most of the doubtful waters were so classed because of the high content of ammonia, chlorine, and iron present, and not because there was any evidence of pollution by sewage. Certain waters, especially from the coal and gas belt, have a high chlorine and ammonia content, which renders them undesirable for drinking or domestic use, although there is no claim that such waters are capable of producing disease. Of the shallow or surface wells but 11 could be passed as pure, while 20 were undoubtedly bad and 9 were evidently in a transition stage from good to bad. If we class these last wells as bad, a condition they will doubtless reach eventually, we find that but 11 out of the 40 shallow wells used as public supplies were above suspicion. But 6 of the 18 stream supplies were pure; 2 were undoubtedly bad and 10 were receiving sewage either directly or as the runoff from cultivated and inhabited ground. None of the 8 pond supplies were bad, although 3 were of doubtful quality. Of the 23 springs, 10 were good, 11 bad and 8 of doubtful quality. It is not probable that these bad springs were true spring supplies. They were evidently waters draining off inhabited areas and breaking out at some fault a short distance below the surface, rather than deep ground waters.

### PRIVATE WATER SUPPLIES.

At least 2,000,000 citizens of Indiana are dependent upon wells for their water supply for drinking and domestic purposes. In country districts no community system is possible and in many small villages the expense of installing a public supply is as yet sufficiently prohibitive to compel the continued use of the well.

In pioneer days the first desideratum for home-making was an

abundant supply of pure water, and a flowing spring was quite as attractive to the early settler as fertile acres. When springs were not found the dug well supplied the family with an abundance of pure wholesome water. Unfortunately the conditions of early days, when pumps were not obtainable, made it advantageous to dig the well as near the kitchen door or barnyard as possible, thus saving the task of carrying water long distances by hand or with the aid of the shoulder yoke. The same wells still supply later generations, but instead of furnishing pure water, they now all too frequently are but pools of filtered sewage, the effluents of the barnyard, kitchen sink or adjacent privy, liable at any time to bring sickness to the user, or an epidemic to the community.

It is usually thought that if a well is thirty feet from a contaminating source it is safe from pollution; that if, perchance, any seepage does take place, the effluents will have been made as pure as water from the skies, in the mysterious laboratory of the earth. Such reasoning has long been proved false. If a well is freely used, so the level of the water is below that of the water in the surrounding earth, inflow will take place for a distance of one hundred feet laterally, and in the direction from which the ground water flows for a much greater distance. Hence, ordinarily a source of filth, in order to contaminate a well, must be within one hundred feet, or, in extreme cases, two hundred feet, except in the direction from which the ground water flows. But this is not the whole truth, for the original source of filth may be much farther removed and have gradually defiled the soil in the direction of the well, until it has extended within its influence. Cesspool filth has been known to seep through the soil for a distance of two hundred yards and poison wells.

In a small rural village the supply of water may have been of unexceptionable quality for an indefinite time, but as the place grows, population becomes more dense, the ground water is drawn on in excess of the supply, the drainage area of the well is increased and the water becomes less pure, both from this cause and from the increased amount of sewage returned to the soil, which is sure to be saturated with organic matter beyond its power of oxidation, and pollution of the wells is inevitable.

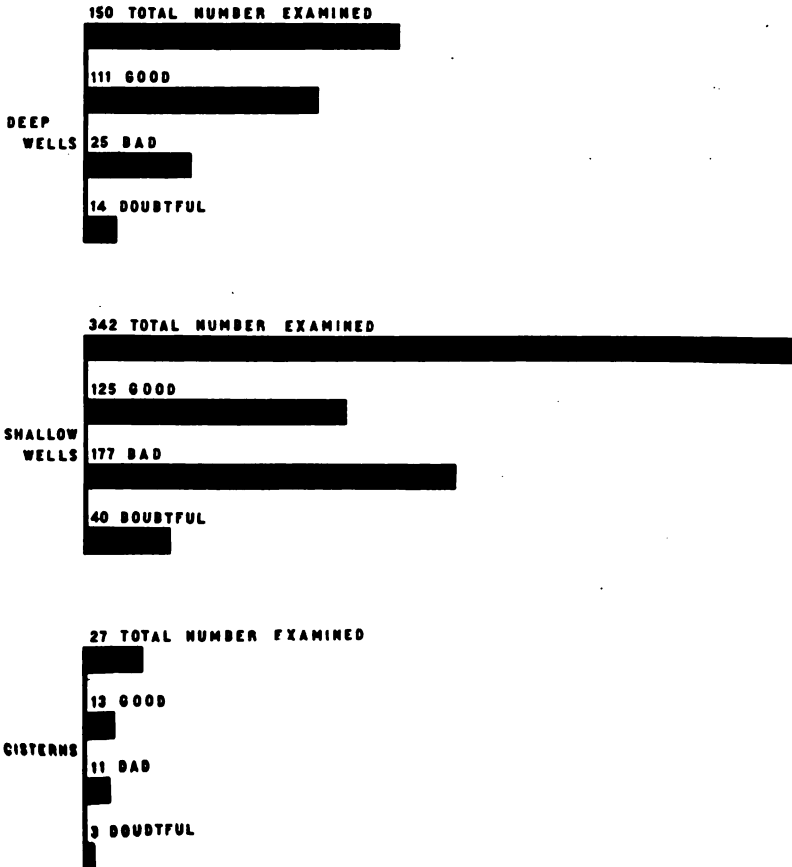
During the past year we have made a large number of analyses of water from private wells. In many cases the samples were not

submitted for analyses until illness, usually typhoid fever, aroused the family, or more frequently the family physician, to question the purity of the supply. The blind faith in the purity of well water, especially when it has been used by several generations of the same family, is one of the chief reasons why typhoid fever so constantly ravages country districts. The honor of the family well is held as inviolate as the honor of the family name, and any hint or suggestion of possible impurity is met with a laugh of scorn. We have heard time and again the statement, "My well water is the best in the county or State," and have found by analysis that it was but little better than raw sewage; clear and cool perhaps, but nevertheless reeking with the putrefactive bacteria of the privy vault and filthy hogpen.

The condition of the private well is best illustrated by graphic representation, and the following charts indicate clearly the results of a year's work and as well hint what will have to be done before the character of the water used by the country householder is as good as that supplied the residents of cities and towns where public water systems are in use.

If these charts are summarized we find that 492 private well waters have been analyzed, of which 236 were pure, 202 bad and 54 of doubtful quality. If we class the doubtful waters as bad, since they will eventually reach this condition, we see that 256, or 52 per cent., of the private well supplies are of such quality as to be unsuitable for drinking and domestic use. If this figure holds good throughout the State we can readily see why the typhoid returns from the country districts are always high. Making another classification based on the source of the waters, we find that of 150 deep well waters analyzed but 25 were bad, while 111 were of good quality. The deep well is evidently a satisfactory private supply if it is derived from true second water. Of 342 shallow wells, 177 were undoubtedly bad, 125 were good and 40 were of doubtful quality. It is not surprising that many wells are polluted, because the universal custom of grouping the house, barn and water supply within easy reach of each other has made the well the center of drainage area for all household sewage and farmyard waste. Great numbers of these old wells are still in common use, and, save where analysis has proven the water to be a filtered sewage, of good repute in the community. The impor-

# CONDITION OF PRIVATE WATER SUPPLIES IN INDIANA 1906



tance of an analysis of these well waters can not be over estimated. In some towns where public sentiment has been aroused, a series of analyses has shown that hardly a single well in the thickly settled village was suitable for use, because of the presence of sewage effluents. Where such conditions exist, and our results convince us that they are by no means uncommon, a water supply brought from some uncontaminated source becomes a public necessity.

## THE CHEMICAL ANALYSES OF SOME SO-CALLED CISTERN WATERS.

When suitable ground or surface water is not obtainable the collection and storage of rain water is resorted to. In some parts of the world no other water is used for drinking purposes. This has been the case in the city of New Orleans until continually recurring epidemics of yellow fever spread by mosquitoes bred in cisterns and water tanks forced the introduction of a municipal water supply. Indiana has an abundance of both ground and surface waters, but, since in some cases the water is not suitable for use and more particularly because of the adaptability of rain water to domestic and laundry purposes, cisterns are common in all parts of the State. Cistern water is rain water collected from a flat surface, usually a roof, and stored in vaults, generally underground but sometimes built in cellars. The character of the water is entirely dependent on the condition of the roof which is washed by the rains and the suitability of the storage reservoir. The roof of a house, exposed as it is to the dust from the streets, excrement from birds, fallen leaves and mossy growths, is not an attractive nor sanitary place from which to collect drinking water, and the gutters and down pipes should be so arranged that the first water which falls is not allowed to flow into the cistern. After the roof is well cleansed the subsequent rainfall may reach the cistern in a fair degree of purity.

A question of first importance in considering a rain water supply is the material out of which the walls of the storage cistern are to be made. Slate and stone are the most suitable materials but are not often available except for small cisterns. Brick walled cisterns lined with cement are by far the most

common, and though the hardness of the water is somewhat increased by the solubility of the lime salts in the cement, they are easily built and at low cost and if properly constructed, well adapted for the purpose. Tanks of wood make good cisterns provided they are kept full, but if there is fluctuation in the water level, organic development will occur and impart a disagreeable taste and odor to the water. Cement or concrete cisterns are rapidly coming into use and, aside from increasing its hardness, do not injure the quality of the water. Cisterns so constructed are very desirable and are to be preferred above all other kinds where a large volume of water is to be stored. One form of cistern that is frequently built has a partition wall across it making a chamber that is filled with charcoal or other filtering material. When new this construction furnishes a water with a less pronounced "cistern" taste than is obtainable from the ordinary form. This arrangement is not desirable because the water is simply strained, never purified, and the filter or retaining basin rapidly becomes filled with filth that can not be readily removed. The suitable location of the cistern is of first importance in determining the quality of the water it furnishes. Frequently it is in the back yard, exposed to drainage and seepage from garbage piles, accumulated filth and open privy vaults. During the past year we have analyzed the water from 27 cistern supplies. Of the entire number we found but 13 that could be classed as potable; in all the other cases the cisterns had evidently received water from the surrounding ground as well as from the roof. Several samples, notably numbers 56, 294 and 396 (see p. 149), were nothing but sewage effluents, and were dangerous waters for use.

A good cistern water should be soft, free from sediment and vegetable growths, and its chemical composition should be practically that of rain water. It should be free from chlorine and nitrates and low in solids. The following tables show the composition of some of the cistern waters analyzed during the past year and are sufficient condemnation of the average cistern supply as a source of water for drinking and domestic purposes.

## CHEMICAL ANALYSES OF SOME SO-CALLED CISTERN WATERS.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as nitrates.		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks.
						Free.	Alb.-minoid.	Ni- trates.	Ni- trites.		Total.	Fixed.				
56	Oct. 11, 1905.	—	1.0	None.	V. slight.	.0008	.0053	.6000	.0025	2.20	—	—	—	.0160	—	Very badly polluted.
251	April 8, 1906.	—	5+	Slight.	Con. flocc.	.0034	.0.08	2.0000	.0006	4.30	39.0	27.9	2.8	.0000	+	Receives ground water.
277	April 17, 1906.	—	10—	V. s.	V. slight.	.0010	.0054	.1500	.0002	.40	22.1	18.3	4.5	Trace.	—	Receives seepage.
278	April 17, 1906.	—	0.0	None.	V. slight.	.0014	.0050	.3000	.0002	1.80	29.2	2.43	5.6	.0000	—	Receives seepage.
286	April 21, 1906.	Limey ....	0.0	V. s.	V. slight.	.0020	.0044	.1200	.0000	.60	11.0	9.0	8.1	.0160	—	Receives oxidized sewage.
294	April 21, 1906.	—	5—	None.	V. slight.	.0050	.0126	.1200	.0020	3.50	54.0	45.0	9.4	Trace.	*	Badly polluted.
298	April 21, 1906.	—	0.0	None.	V. slight.	.0014	.0043	.2500	.0025	2.00	53.0	38.5	6.4	.0050	—	Polluted by seepage.
298	April 21, 1906.	S. earthy.	5—	None.	V. slight.	.0018	.0063	.6500	.0020	2.70	31.0	25.0	7.6	Trace.	—	Heavily polluted.
297	April 21, 1906.	S. earthy.	5—	V. s.	Slight.	.0010	.0074	.2000	Trace.	.80	18.0	14.0	4.1	Trace.	—	Slightly polluted.
318	May 4, 1906.	Limey ....	0.0	None.	None.	.0000	.0032	.4000	.0000	1.40	35.9	32.8	8.8	.0000	—	Receives seepage.
344	May 25, 1906.	S. earthy.	5—	None.	V. slight.	.0050	.0094	.0300	.0003	.48	10.9	8.4	3.6	Trace.	—	Receives seepage.
364	June 23, 1906.	None ....	0.0	None.	V. slight.	1.4000	.3030	8.70	.3030	8.70	50.0	29.0	6.0	.0000	—	Badly polluted.
452	Aug. 1, 1906.	S. foul ....	0.0	V. s.	V. slight.	.0004	.0110	.2500	.0010	1.70	28.7	18.8	19.6	Trace.	*	Receives seepage.
573	Sept. 13, 1906.	None ....	0.0	Slight.	S. whitish.	.0000	.0018	.0700	.0000	2.00	20.0	18.8	19.2	.0000	*	Receives seepage.
576	Sept. 15, 1906.	None ....	0.0	Slight.	S. whitish.	.0000	.0044	.1000	.0000	1.00	20.2	13.5	7.9	.0000	—	Good.

\* Gas-forming bacteria present.



## THE INTERPRETATION OF WATER ANALYSES.

The problems of the water analyst are many and varied. Every new sample submitted for examination brings with it its own peculiar conditions, and must be considered, not in relation to other analyses, but as an original study. The evidences of the mound builders are passed unnoticed by the casual observer, and an up-turned flint bears no story, but the skilled eye and trained knowledge of the patient student gives to each a meaning that reveals the history of prehistoric days. Water, like clay and stone, bears evidence of its previous history no less intelligible to him who can read the records. To a chemist each determination in the course of a water analysis has its value, and the sum of these, when added to a knowledge of surroundings, reveals the purity or the pollution of the water, conditions which are so often falsely interpreted.

In the course of our work we are frequently asked to explain the results of our analyses and to tell why, in the case of two analyses apparently similar, we have classed one supply as pure and condemned the other as polluted. We also meet with prejudiced opinion, born of a mistrust of the chemist's ability to judge of a water's purity, a condition of mind unfortunately too often the result of experience with some dabbler with test tubes who made snap judgments based upon imperfect analyses of unsuitable samples, or again with men who believe that the less an analyst knows about the sample at hand the more free from prejudice will be his opinion concerning it. We even more frequently suffer because of that admiration for chemical knowledge and belief in chemical clairvoyance which expects us to decide from a sample, while you wait, if a certain water caused the death of a person a year since, in a distant town, under unknown conditions, a mark of appreciation very trying to a man who knows his own limitations. Hardly a day passes but we receive from some anxious person or a physician who should be better informed, a vest pocket sample of water or a perfume bottle containing traces of its original contents, whisky flasks, catchup bottles, piccalilli jars, marked sample 1 and sample 2, and a request for immediate examination. With a view to dispelling some of these illusions and placing the

work of the water laboratory more clearly before its patrons it will be well to discuss in untechnical phrases just what is meant by water analysis and the conditions that make it necessary.

The correct interpretation of analytical results requires a knowledge of the source of a water, its surroundings, geological horizon and past history. Every water has its own characteristics. The presence of any given element of its composition is interpreted according to the kind of water under consideration. Spring water is, of course, colorless; river water of equal purity is probably colored and turbid; pond water may contain considerable amounts of organic vegetable matter without becoming unusable, which, if present in a well water would place it in the polluted class. Deep well water normally may contain large amounts of chlorine, while an equal amount in a surface or dug well would be a mark of sewage pollution.

In the examination of a water we classify the substances found in it as mineral and organic. This distinction is not altogether a permanent one, for the mineral and organic conditions are dependent on one another, and in part pass into each other. The mineral constituents are usually potash, soda, lime, magnesia, iron and alumina, in combination with chlorine and sulphuric, silicic, nitric and carbonic acids. The organic constituents are, first, living organisms—animal and vegetable; second, the products of organic life, such as albumen, urica, tissue, etc.; third, products of the decomposition of organic matter.

The ordinary methods of analysis determine the form and amount of these constituents at the time the water is analyzed. It is usually not necessary to determine the mineral constituents, but only those factors which are influenced by the presence of sewage or contaminating material. Sewage is very rich in organic matter, chlorine and solids, and so a determination of these components will give us the information we desire. The organic matter contains large amounts of nitrogen, which analytical processes enable us to determine with great accuracy in four forms, namely, as organic nitrogen, as ammonia, as nitrous acid and as nitric acid. This order represents the order of change from organic nitrogen to its most highly oxidized condition. If we find ammonia present in the last form, that is, as nitric acid, we know that

whatever organic matter was present has been oxidized or destroyed, and the source of danger removed; but if we find much ammonia or nitrous acid present we see that oxidation is not complete, a proof that the source of pollution is not far from the supply, and therefore the water must be regarded as unwholesome.

It must be understood that the various constituents determined in a water analysis are not of themselves injurious; they are but indexes of pollution, and the factors found are valuable only as they are comparable with factors predetermined on a water of known purity of the same class. That this important fact may be perfectly understood, below are given detailed analyses of both good and bad waters of several classes:

#### SPRING WATERS.

	POTABLE.	POLLUTED.
Odor .....	Slight vegetable.	None.
Color .....	0.0	0.0
Turbidity .....	Slight.	Very slight.
Sediment .....	White flocculent.	Very slight.
Free ammonia .....	.0010	.0046
Albuminoid ammonia .....	.0014	.0280
Nitrates .....	.0500	2.4000
Nitrites .....	.0001	.0003
Chlorine .....	.3000	5.0000
Total solids .....	30.00	35.00
Fixed solids .....	25.40	31.20
Hardness .....	13.80	13.80
Iron .....	.0000	.0000

#### DEEP WELL WATERS.

	POTABLE.	POLLUTED.
Odor .....	None.	None.
Color .....	10.00	0.0
Turbidity .....	None.	Very slight.
Sediment .....	None.	Much red.
Free ammonia .....	.0066	.0310
Albuminoid ammonia .....	.0000	.0048
Nitrates .....	.0000	1.0000
Nitrites .....	.0001	.0040
Chlorine .....	.2000	8.5000
Total solids .....	37.60	131.80
Fixed solids .....	32.50	104.60
Hardness .....	11.80	27.20
Iron .....	.0440	.0400

## DUG WELL WATERS.

	POTABLE.	POLLUTED.
Odor .....	None.	None.
Color .....	0.0	0.0
Turbidity .....	Slight	Slight.
Sediment .....	Much red.	None.
Free ammonia .....	.0010	.0080
Albuminoid ammonia .....	.0000	.0560
Nitrates .....	.0100	.0800
Nitrites .....	.0000	.0800
Chlorine .....	.2000	12.8000
Total solids .....	35.00	98.10
Fixed solids .....	31.40	75.50
Hardness .....	15.50	22.50
Iron .....	.0500	.0000

## CISTERN WATERS.

	POTABLE.	POLLUTED.
Odor .....	Vegetable.	None.
Color .....	5.0	5.0
Turbidity .....	Very slight.	None.
Sediment .....	None.	Very slight.
Free ammonia .....	.0060	.0060
Albuminoid ammonia .....	.0100	.0128
Nitrates .....	.0000	.1200
Nitrites .....	.0000	.0020
Chlorine .....	.1000	3.5000
Total solids .....	2.60	54.00
Fixed solids .....	1.10	45.00
Hardness .....	1.00	9.40
Iron .....	.0000	.0000

In every analysis given above the polluted samples were of better appearance than the pure waters, and when subjected to ordinary physical examination would have been accepted as pure. The high ammonia, nitrate, nitrite and chlorine factors obtained showed that on the contrary the supplies were heavily polluted with sewage and absolutely unfit for drinking or domestic use.

Bacteriological examinations, that is, the determination of the number and kind of bacteria present in water, are necessary in many cases, but a single bacterial analysis is so subject to experimental error that the results obtained are of small value. For the purpose of judging the efficiency of filter beds and water purification systems, bacterial tests are most valuable; the filtered water may be changed but little from raw water so far as chemical analysis can determine, and yet bacterial tests may show that a source of danger is largely or entirely removed. Clark and Gage say:\* "In the examination of samples of spring water collected in the

\*Am. Pub. Health Ann. Report, Vol. xxix.

proper manner the degree of purity is shown almost absolutely by chemical analysis. The complete analyses of samples from a large number of domestic wells show that polluted waters that might become unfit for consumption at any moment are more plainly indicated by a single chemical analysis than by a single determination of *B. Coli*. The presence of *B. Coli* at the time of examination may indicate actual danger to health, and its absence even in the most polluted of these waters, chemically, may indicate lack of imminent danger, but the chemical analyses are certainly the most decisive."

Water analyses are desirable whenever the supply is subjected to probable pollution because of unfavorable location, or when sickness occurs of a type usually communicated in a water supply. We receive many samples for analysis collected from sources known to be polluted. Such examinations are unnecessary. It does not need extensive chemical analyses and a dozen plate cultures to prove the presence of filth in a stream that is used as a sewer for a city, nor is it necessary to waste time over the water from a dug well that by reason of its location must be a cesspool for household wastes or barnyard washings.

# The Public Water Supply of the State of Indiana

BY

H. E. BARNARD, B. Sc.

## **WATER SUPPLY OF INDIANA.**

---

### **ADAMS COUNTY.**

Berne.—No public supply. Water is obtained from private wells and cisterns. The town is located directly on the Mississippi and St. Lawrence watershed.

Geneva.—This town is supplied for the most part by private wells. Most of the wells are driven; two or three open wells. A few cisterns are in use.

### **ALLEN COUNTY.**

Fort Wayne.—This city has its own water supply, built in 1879. The water comes from wells bored 60 to 150 feet through soil, gravel, sand, blue clay, hardpan into rock. It is pumped into a reservoir that has a capacity of 3,000,000 gallons. The water is hard and at times has a metallic taste. There are 100 miles of distributing mains in use, and the service pipes are lead. About 3,500,000 gallons are used daily by about 90 per cent. of the population. There are about 10,000 taps.

Monroeville.—Water supply is from private wells.

### **BARTHOLOMEW COUNTY.**

Columbus.—The water system is owned by the city and was built in 1870. The water is taken from East Fork of White River just below the junction of Flat Rock and Driftwood Fork. The water is obtained from a gallery well which extends diagonally across the river. Sewage enters the river a short distance below the intake of the water supply. The supply is insufficient and must soon be increased. The water is moderately hard and flows through twenty miles of cast iron mains. The service pipes are of wrought iron. There are about 2,500,000 gallons used daily by about 890 families. Very few families use the water for drinking or domestic purposes, getting the water for that purpose from private wells.

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF FT. WAYNE PUBLIC SUPPLY.**  
**Parts in 100,000.**

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia		Nitrogen as		Chlorine.	Solids.		Hardness.	Irpn.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
291	April 20, 1906.....	None.....	0.0	V. s.....	V. s.....	.0200	.0044	.0100	.0000	.70	33.0	30.0	14.0	.04	....	G.
292	April 20, 1906.....	None.....	0.0	V. s.....	V. s.....	.0200	.0038	.0100	.0000	1.20	47.8	44.0	14.8	.035	....	G.
337	May 17, 1906.....	None.....	0.0	Much.....	S. reddish....	.0120	.0028	.0100	.0004	2.2	62.6	50.7	15.8	.04	....	G.
588	Sept. 15, 1906.....	None.....	5—	V. s.....	S. flocc.....	.0400	.0080	.0000	.0005	3.6	68.8	54.8	26.4	.03	....	G.
589	Sept. 15, 1906.....	None.....	0.0	None.....	V. s.....	.0044	.0010	.0000	.0003	3.6	69.0	54.3	27.2	.00	....	G.



Elizabethtown.—The supply of this town is from both dug and bored wells, depth from 30 to 100 feet, through substrata, gravel and limestone. There are three deep public wells. Hard.

Hartsville.—Six public wells. The water is hard. Nearly half the families have private wells, some of which are dug and some drilled, the wells being from 18 to 100 feet deep.

Hope.—Private wells and cisterns. Most of the wells are drilled.

Jonesville.—From private wells, driven 18 to 24 feet deep; free flow. Soil is sandy loam, subsoil is sand so deep it is not known what the character of the underlying strata is.

#### BENTON COUNTY.

Boswell.—Two town wells, the rest private. About ten persons use the water from the town wells. Wells are driven from 50 to 220 feet. One of the town wells is shallow.

Earl Park.—No public supply. Private wells nearly all deep and bored to an average of 100 feet.

Fowler.—The Fowler Utilities Co. was built about 1895 by the Seckner Contracting Co., for the town of Fowler, but is now under private control. The supply is from four driven wells, two 600 feet deep, and two 200 feet. The water is pumped to a standpipe with a capacity of 1,000,000 gallons, and 75,000 gallons per day are pumped. The wells are driven through black loam soil, clay subsoil, rock and gravel at a depth of 100 feet and so on down. The water flows through five miles of cast iron mains into galvanized iron service pipes. About 98 per cent. of the people, or 400 families, use the water. The water is considered pure, although it contains a large per cent. of iron. Practically no wells in the town.

Otterbein.—Private wells about 40 feet deep, extending into the gravel.

Oxford.—Town owns the lease of the public supply, which consists of three driven wells 143, 159 and 175 feet deep, driven into gravel. It is supplied by gravity. There are  $3\frac{1}{4}$  miles of cast iron distributing pipe and the service pipe is galvanized iron. About one-sixth of the population, or 153 families, use the water.

## CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF MONTPELIER PUBLIC SUPPLY.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Solids.		Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.	Total.	Fixed.	Hardness.		
203 Feb. 5, 1906	Oily	0.0	0.0	v. mld	v. mch. red	.0040	.0080	.0010	.0000	101.2	90.8	15.6	.30	.....
206 Feb. 12, 1906	Brimstone	0.0	0.0	v. s	s. earthy	.0040	.0080	.0150	.0010	108.8	91.5	15.6	.04	.....
209 Feb. 19, 1906	S. earthy	0.0	0.0	s	mch. reddish	.0060	.0054	.0000	Tr'ce	106.0	85.6	16.0	.14	.....
217 Feb. 26, 1906	Natural gas	5 +	5 +	v. much	v. much black	.0120	.0014	.0050	.0008	99.5	80.0	11.2	.20	.....
218 Feb. 26, 1906	V. S	5 -	5 -	Marked	v. much red	.0014	.0084	.0100	.0010	102.3	81.7	15.1	.30	.....
256 April 3, 1906	Oily	5 -	5 -	v. mld	earthy	.0010	.0114	.0100	.0004	83.5	70.4	12.8	.08	.....
257 April 3, 1906	Like gas	5 -	5 -	v. mld, red-dish.	$\frac{1}{2}$ in black	.0210	.0048	.0200	.0008	105.0	86.8	4.8	.14	.....
258 April 3, 1906	Oily or gassy	5 -	5 -	v. mld, red-dish.	$\frac{1}{2}$ in black	.0030	.0180	.0050	.0007	115.0	98.0	13.4	.01	.....
301 April 30, 1906	Oily or gassy	0.0	0.0	mld	$\frac{3}{4}$ in black	.0040	.0048	.0200	.0020	87.2	75.2	9.0	.10	.....
302 April 30, 1906	Oily or gassy	0.0	0.0	mld	$\frac{3}{4}$ in black	.0014	.0054	.0100	.0015	89.5	76.2	11.0	.14	.....
354 May 26, 1906	Oily	0.0	0.0	v. s	ex. reddish	.0012	.0028	.0050	.0007	101.4	90.7	16.2	.05	.....
355 May 26, 1906	Musty	0.0	0.0	v. s	s	.0014	.0058	.0070	.0002	96.0	80.0	16.2	.03	.....
256 May 26, 1906	S. earthy	0.0	0.0	v. s	mch. reddish	.0080	.0038	.0010	.0010	96.4	80.0	15.1	.03	.....
357 May 26, 1906	Earthy	0.0	0.0	s	consid. earthy	.0160	.0028	.0060	.0008	94.2	75.0	13.8	.012	.....

## BLACKFORD COUNTY.

Hartford City.—Hartford City owns its own public water supply, which was built in 1894, and consists of seven driven wells 260 feet deep. This water is pumped into a reservoir with a capacity of 385,000 gallons and then goes through 17 miles of cast iron mains. Lead and galvanized iron service pipes are used. There are 950 service lines, but there are several families on some of these lines. The daily consumption is about 400,000 gallons and about 65 per cent. of the people use the water. The water is hard.

Montpelier.—The Montpelier Light and Water Co. supply the water for this city. Their plant was rebuilt in 1905 by the above named company. Their supply consists of deep wells and a spring in old quarry basin of approximately one-half acre in area. The wells average 200 feet in depth in rock, and are drilled. The water is pumped through about six miles of cast iron distributing mains. The service pipes are lead and galvanized iron. One-half million gallons consumed daily. About 75 per cent. of the population, or 200 families, use the water. There are also private wells in use.

## BOONE COUNTY.

Jamestown.—The water of this town is apparently pure. The supply is from driven wells owned by the different families, and ranging in depth from 40 to 120 feet.

Lebanon.—The water supply of this town was built in 1894 by Bynum, Brenton & Fall. The supply is from wells; one is 42 feet deep, another 230, another 90. They are driven through black loam, subsoil, stiff clay, blue clay into gravel. The watershed is wooded and cleared land. The water is pumped to a standpipe holding 189,000 gallons. The water is hard and when heated gives off the odor of decayed leaves. There are  $15\frac{1}{2}$  miles of cast iron mains. The service pipes are lead. About 65 per cent. of the population use 300,000 gallons a day, and there are 900 taps in use.

Thorntown.—No public water supply. Private dug and driven wells.

Zionsville.—No public supply.

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF LEBANON PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
359	May 26, 1906.....	Sl. foul.....	5 -	Slight.....	Exc. red. floe.	.1900	.0128	.0100	.0000	.8	53.8	43.7	23.2	.90	...	.....
385	June 18, 1906.....	Sl. foul.....	0.0	Sl. floe.....	Mch. reddish.	.0556	.0164	.0000	.0220	1.2	65.2	52.1	.....	1.0	...	.....

**CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELL AT ZIONSVILLE.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
197	Jan. 30, 1906.....	None.....	0.0	S.....	V. s.....	.0094	.0123	.0100	.0003	3.10	60.6	52.3	19.1	trace	-	Good.

## BROWN COUNTY.

Nashville.—The water supply is altogether from wells, mostly dug, although there are quite a number of driven wells. The soil is sandy, with a gravel subsoil and underlying strata of clay.

## CARROLL COUNTY.

Delphi.—The city purchased their supply in 1902. It comes from three springs flowing from gravel, underlying strata and blue clay. The water runs to the reservoir by gravity and from there is pumped to the standpipe, which holds 27,000 gallons. The reservoir is 60 feet in diameter and 14 feet deep, with a capacity of 350,000 gallons. There are  $4\frac{2}{3}$  miles of mains. Wooden pipes are used to reservoir and the rest are iron, with lead and iron service pipes. Four hundred and twenty-five families, or about 85 per cent., used about 250,000 gallons daily. The water has been analyzed.

Flora.—Springs and wells furnish the water supply. Some wells are driven, and these go through black subsoil, blue clay and into hardpan just before striking water.

## CASS COUNTY.

Logansport.—Logansport owns its own water supply, which was built in 1875. The water comes from Eel River. This stream averages about five feet in depth and 250 feet wide. There are several picnic grounds above the city and along this stream, and also a park just at the city limits. The water is pumped into iron mains, and lead and iron pipes are used for service pipes. The water is soft and is muddy. About one-half of the people use this water, the rest getting their supply from private wells. The city water is considered to be badly polluted.

## CLARK COUNTY.

Charlestown.—The water supply in Charlestown is from private wells, two springs and private cisterns. The water is clear, ample and is considered pure.

Clarksville.—Supply from driven and dug wells,

## CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF LOGANSFORT PUBLIC SUPPLY.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Solids.		Iron.	B. Coll.	Remarks.
						Free.	Albuminoid.	Nitrates.	Nitrites.	Total.	Fixed.			
416	July 18, 1906.....	V. slight.....	0.0	Much.....	Mkd. red.....	.0220	.0046	.0000	.0003	51.7	38.0	15.1	.10	.....
418†	July 18, 1906.....	Sl. earthy....	0.0	V. slight.....	Mch. earthy....	.0118	.0150	.0500	.0002	36.4	28.9	11.4	.0000	.....

\*Gas formers present. †Not the same as 416.

## CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF JEFFERSONVILLE PUBLIC SUPPLY.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Solids.		Iron.	B. Coll.	Remarks.
						Free.	Albuminoid.	Nitrates.	Nitrites.	Total.	Fixed.			
413	July 18, 1906.....	Decid'ly foul	0.0	None.....	V. s. flocc.....	.0120	.0024	.3000	.0020	65.0	49.5	19.0	.02	.....

Jeffersonville.—The Jeffersonville Water Supply Co. furnishes the water for this city. This was built in 1887 by S. R. Bullock & Co., and the water is taken from the Ohio River. The water receives a large amount of sewage or waste, mostly from a distance, the nearest point being the city of Madison, 50 miles above. A standpipe 15 feet in diameter and 150 feet in height has the water pumped into it. The water is soft. There are 12 miles of cast iron mains, galvanized iron being used for the service pipes. Twenty-five per cent., or 600 families, use daily about 1,000,000 gallons. The Water Company is installing a water supply system from driven wells, the quality of which is excellent.

Sellersburg.—Wells and cisterns furnish the supply for Sellersburg. Some of the wells are from 12 to 35 feet in depth, and are through clay, subsoil, slate, cement rock and limestone. Some few wells pass into sand and gravel. Much of the water is of inferior quality, and little else than surface water.

#### CLAY COUNTY.

Brazil.—This city owns a public water supply of drilled wells, but when there is a fire the water has to be pumped from a mud pond. The inhabitants on the watershed number about 1,000, and the land is cleared. The water is hard and is pumped direct in cast iron mains, with lead and iron service pipes. About 500,000 gallons are used daily, but is not used for domestic purposes except after boiling, as most of the drinking water is obtained from private wells. The city is putting in more drilled wells and expects soon to have sufficient water from this source to serve all purposes.

Bowling Green.—Supply from dug wells.

Carbon.—Supply is from wells. Water is of good quality.

Center Point.—Water supply from wells driven and dug; depth from 16 to 60 feet through soil, yellow clay  $1\frac{1}{2}$  to 2 feet, subsoil, white clay, blue clay, black jack, slate and coal. The water at times has a mineral, sulphur, sweetish and vegetable taste and is very hard as a rule. The supply is not the best in the shallow wells.

Clay City.—Families have own wells, dug through clay and subsoil with an underlying strata of rock and coal.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF BRAZIL PUBLIC SUPPLY.  
Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
241	March 26, 1906.	Slight.....	0.0	None.....	None.....	.0128	.0080	.0300	.0008	3.0	54.0	46.4	10.8	.02	—	Good.
242	March 26, 1906.	Sl. earthy....	5.0—	Slight.....	Sl. earthy....	.0420	.0228	.0100	.0010	.2	61.3	51.6	3.2	Tr'ce	—	Bad.
252	March 31, 1906.	Earthy.....	0.0	V. sl.....	V. sl.....	.0090	.0044	.0400	.0013	2.40	69.10	48.2	10.0	.00	—	Doubtful.
253	March 31, 1906.	None.....	0.0	V. sl.....	Sl.....	.0270	.0054	.0300	.0010	1.80	48.10	40.6	7.6	Tr'ce	—	Doubtful.
254	March 31, 1906.	None.....	0.0	V. sl.....	V. sl.....	.0290	.0046	.0200	.0080	1.80	61.30	49.3	10.4	.00	—	Doubtful.
255	March 31, 1906.	Veg.....	5.0	Consid.....	Cons. red....	.0038	.0038	.0000	.0002	2.70	72.80	57.1	10.2	.100	—	Good.
595	Sept. 18, 1906.	None.....	0.0	Sl.....	Cons. earthy..	.0000	.0024	.0200	.0000	4.6	82.0	62.0	25.4	.08	—	Good.
597	Sept. 18, 1906.	None.....	0.0	V. sl.....	V. sl. earthy..	.0136	.0054	.0100	.0020	4.6	82.6	60.3	25.3	.04	—	Good.
598	Sept. 18, 1906.	None.....	0.0	V. sl.....	V. sl.....	.0130	.0088	.0100	.0015	4.5	80.9	60.3	25.2	.04	—	Good.



**Staunton.**—The water used in Staunton is from private wells usually about 17 feet deep. Probably 80 per cent. of these wells go dry one or more times a year. Water is good when supply is plentiful.

#### CLINTON COUNTY.

**Colfax.**—All private wells. Some are driven, and range from 27 feet to more than 100 feet deep. Dug wells are different depths, some not more than 12 feet.

**Frankfort.**—The Frankfort Water Works Co. supplies this city with water from driven wells. The wells are 85 feet in depth, through 20 feet of an impervious blue clay into a gravel strata from which water is taken at 30 feet. The reservoir is 20 feet deep and covered and is filled by direct pressure. Capacity 300,000 gallons. The water is hard and about five years ago became unpleasant to taste or smell. There are 16 miles of mains of wrought iron laid and lined with cement, and the service pipes are galvanized iron. There are 1,650 connections with mains, and 75 per cent. of the people use this water. The daily consumption is about 1,000,000 gallons.

**Kirklin.**—No water supply but private wells.

**Michigantown.**—Private wells bored, driven or dug from 10 to 50 feet deep.

**Rossville.**—Both dug and driven private wells furnish this water supply. The greatest menace to health is a number of false wells dug in the bottom of cellars for purpose of drainage. Many of them reach down to the strata of sand from which the private wells get their water.

#### CRAWFORD COUNTY.

**Alton.**—Cistern water used altogether. Sometimes during a drouth or low water, water from the Ohio River is used.

**English.**—The English Water Company which was built in 1895 by W. L. Luckett and Jno. V. McCoy, furnishes the supply for this town. The water comes from three springs with a capacity of 1,000 barrels a day. There is one mile area of wooded watershed, about 1,000 inhabitants living thereon. The water is supplied by gravity, and there are four miles of iron mains

in use. Galvanized iron is used for the service pipes. About 1,500 gallons per day are used by six hundred families, or 100 per cent. of the population.

Leavenworth.—The water for this town is supplied by the Leavenworth Water Co. from bored well, pumped into a reservoir, size 60x80x10. This plant was established in 1896. The well is 77 feet deep through sand and gravel. There is a bad taste occasionally caused by decayed leaves that have blown in the reservoir. There are 7,140 feet of cast iron mains and galvanized iron service pipes; 2,700 gallons are used daily, and 10 per cent., or about 16 families, use the water. There are also two public wells and quite a number of private wells and cisterns.

Marengo.—Grant & Davis Water Co. supply this town. The company was established in 1904. The supply is from a spring in limestone, with a capacity of 5,000 to 10,000 gallons per hour. Water is pumped into closed reservoir that holds 1,200 barrels in form of cistern. The water is hard. Cast iron is used for the mile and a half of mains, and gaspipes, usually black, are used for service pipes. Fifty families, or 30 per cent., use the water, and about 6,000 gallons daily is consumed. There are also private wells.

Milltown.—Private wells and cisterns supply this town. Dug wells run 30 feet in depth and bored wells run 200 feet through soil, lime and clay, subsoil soapstone, under this sand, gravel and deeper limestone rock.

#### DAVIESS COUNTY.

Elnora.—The only public water supply in this town is from three driven wells on the streets, and this is supposed to be pure and wholesome. Private wells are generally driven, and have an average depth of about 15 feet. Soil and subsoil is sandy, and underlying strata is gravel. The water is hard.

Montgomery.—There are two public wells 20 to 25 feet in depth. As this is very shallow there is no way of accounting for the lack of typhoid fever. One well most used is within three feet of an uncemented street drainage pipe. The private wells are dug from 15 to 40 feet deep, but generally they are 20 to 25 feet. Supply is small and is almost entirely exhausted during dry weather. The soil is clay. The entire corporation of Montgomery

is a watershed drainage north, south, east and west. There are 700 inhabitants on this cleared land, and 25 per cent. of the population use the water from the public wells in dry weather.

Odon.—Odon is built in a slight depression between two areas of upland, each several miles in extent. There is no public water supply. The private wells are dug from 12 to 20 feet in depth. Some wells in the lower part of town are contaminated with surface water in wet weather, which causes a bad taste. The water is both hard and soft.

Washington.—The City Water Co., established in 1887 by C. E. Gray, supplies the water for this town. The supply is pumped from a stream to the standpipe, which holds 240,000 gallons of water. The water sometimes becomes muddy and has a bad odor and taste. Ten miles of iron distributing mains are in use, with service pipes of the same material. About 400 families use the water and the average daily consumption is 1,500,000 gallons. A new filter is being put in.

#### DEARBORN COUNTY.

Aurora.—The City of Aurora Water Co., a private company which in 1904 had the Phoenix Construction Co., of Chicago, build their plant, furnishes this city with their water supply. The water is pumped from the Ohio River into a reservoir holding 280,000 gallons. No sewage or waste above the intake nearer than Cincinnati, which is 28 miles above Aurora. The water is purified by the N. Y. Continental Jewell Filtration Co.'s system. The water is soft and flows through 8 miles of 10-inch cast iron distributing mains. Galvanized iron is used for the service pipes. About 200 families are now using the water at the rate of about 150,000 gallons per day. This system was completed during the past year.

Lawrenceburg.—The supply for this town is from driven public wells ranging in depth from 40 to 70 feet, private wells and cisterns. The water is supposed to come from the Great Miami River.

Moore's Hill.—No public supply. Private wells are dug from 20 to 35 feet deep. Water is from 8 to 15 feet deep. The soil is clay with limestone strata. During dry falls the water in the wells gets very low.

## DECATUR COUNTY.

Greensburg.—A private concern called the Greensburg Water Co., supplies Greensburg with its water. This was established in 1889 by the Ludlow Valve Manufacturing Co. The supply is from bored wells going through yellow clay and limestone into rock. The water is pumped direct. There are about 14 miles of cast iron mains with galvanized iron service pipes, which supply about 400,000 gallons of water per day. About 500 families, or 40 per cent., use this water. There are also private wells in use.

Millhausen.—Supply from private dug wells. They range from 24 to 40 feet in depth. Water first class.

Westport.—Bored and dug wells, and cisterns supply Westport with water.

## DEKALB COUNTY.

Auburn.—In 1898 the Arbuckle-Ryan Co., of Toledo, Ohio, built the water-works for the city of Auburn. The water comes from five 10-inch drilled wells 94, 224, 234, 238, 242 feet deep with a pumping capacity of 1,000,000 gallons every 24 hours. The water is pumped direct into the mains, of which there are 9½ miles of cast iron pipe. The service pipes are lead and galvanized iron. About 600,000 gallons daily are consumed by 50 per cent. of the population, or 460 families. There are also private wells.

Garrett.—In 1896 the City of Garrett built its own water plant and gets its water supply from bored wells. These wells are bored 150 feet through blue clay into gravel, and the water is pumped direct into the mains. About eight miles of mains are used in distributing the water, and the service pipes are of galvanized iron and lead. There are about 500 families using the water, or 90 per cent., and the average daily consumption is 600,000 gallons.

St. Joe.—No public supply.

Waterloo.—The Waterloo Water & Light Co. was built in 1902 by the Olds Construction Co., of Ft. Wayne. This plant furnishes the water supply for the city. The wells are drilled 768 feet in depth, the water is pumped in a reservoir with a capacity of 105,000 gallons, and 8,500 feet of mains are used, made of cast

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF GREENSBURG PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen <sub>as</sub>		Chlorine.	Solids.		Iron.	Remarks.
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.		
10*	Nov. 10, 1906.....	Sl. foul.....	30.	Slight.....	V. much flocc.	.0218	.0220	.0150	.0002	9.6	83.1	70.4	.2000	.....
204	Feb. 12, 1906.....	None.....	0.0	None.....	Mkd. earthy.	.0065	.0074	.0200	.0010	.40	23.2	22.5	11.5 Trace	.....

\* Not same as 204.

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF JASPER PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Iron.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.		
421	July 18, 1906.....	V. slight.....	0.0	None .....	Sl. earthy....	.0044	.0060	.0000	.0180	.2	34.4	27.4	14.0	Tr'ce ....
422	July 18, 1906.....	Sl. foul .....	0.0	Slight .....	Sl. earthy....	.0034	.0138	.0500	.0000	.2	13.0	10.6	4.1	Tr'ce .....

\* Gas formers present.

iron with galvanized iron service pipes. About 20,000 gallons are used per day, but only a few of the people use the water, about 20 families, or 1 per cent. of the population.

#### DELAWARE COUNTY.

**Albany.**—Six years ago the Albany Water & Light Co., using a system of drilled wells, began supplying the city of Albany with water. The wells are drilled 165 feet, and the water is supplied by direct pressure. About five miles of cast iron pipe distribute the water. The service pipes are of cast iron, and 75 per cent. of the population use this supply.

**Eaton.**—About a dozen families in Eaton are supplied with water piped from a deep well. This water is pumped into an elevated tank by a gas engine. Private wells supply the rest of the town.

**Muncie.**—Muncie is supplied with water by the Muncie Water Works Co., a private concern. The water is taken from deep wells and White River and Buck Creek. The watershed of Buck Creek is 15 square miles. In the summer there are frequently picnic parties along White River above the intake. Each stream at point of intake has an inflow of 5,000,000 gallons daily. There is no waste or sewage received in the stream other than that from the oil wells, and that is equal to 15 per cent. of the flow of the stream at low water. The wells are drilled about 100 feet and the supply comes from rock. The water is pumped direct into the mains, which are of cast iron. Wrought iron and lead are used for the service pipes. The water from White River has an unpleasant taste of salt and oil. About 3,500,000 gallons are used daily. An auxiliary pump house has now been erected on Buck Creek and line run to filter plant at main pumping station to deliver water to filter, from which it is pumped to consumers.

**Selma.**—All private wells. About half of them range in depth from 65 to 125 feet, and the rest of them from 20 to 40 feet. A few cisterns are used for supplying the drinking water.

#### DUBOIS COUNTY.

**Birdseye.**—Private wells and cisterns supply this town.

**Huntingburg.**—In 1893 Huntingburg established a public water supply. The water is obtained from a pond covering 20 acres, and

## CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF ELKHART PUBLIC SUPPLY.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.		Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.			Total.	Fixed.				
215	Feb. 26, 1906.....	Sl. earthy....	5.—	None.....	None.....	.0050	.0164	.1000	.0010	.4	23.7	19.6	19.6	9.9	Tr'ce	...	.....
225	March 10, 1906.....	None.....	0.0	None.....	V. sl. earthy.	.0038	.0188	.0300	.0017	.3	24.5	20.2	20.2	9.5	Tr'ce	+	.....
276	April 16, 1906.....	Earthy.....	.5	V. slight.....	Sl. reddish...	.0010	.0054	.0100	.0015	.4	27.0	22.6	22.6	9.2	.04	...	.....

## CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF GOSHEN PUBLIC SUPPLY.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.		Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.			Total.	Fixed.				
472	Aug. 11, 1906.....	V. sl. earthy.	0.0	Slight.....	Consid. earth.	.0064	.0038	.0400	.0040	.4	32.6	29.1	29.1	22.3	.015	*	.....
473	Aug. 11, 1906.....	Sl. earthy....	0.0	Slight.....	Much earthy.	.0050	.0090	.0700	.0120	.2	31.1	25.5	25.5	21.1	.017	* †	.....

\* Gas formers present. † Acid formers present.

6 feet deep, with a mud bottom. The watershed is about 500 acres in extent, and is partly wooded and partly cleared, with about 20 inhabitants thereon. The water is pumped from the pond into a standpipe that has a capacity of 125,000 gallons. At times the water develops an unpleasant odor and taste as of decaying vegetable matter. This water is soft. Four and one-half miles of mains are used, and these are made of iron with galvanized iron service pipes, 166,664 gallons of water being used daily, and about 600 families, or 75 per cent., use the water. The city is building a new pond or lake in addition to the present one, which will have an average depth of 20 feet, and cover from 40 to 50 acres. The watershed will be the same as the old pond, the new one being immediately below the old. The old pond will be used as a catch basin.

Jasper.—The town of Jasper built its water supply about 10 years ago and uses the water from the Patoka river. The water is pumped into a reservoir, and from there flows through about four or five miles of distributing mains or iron. One thousand families use this supply. The water is soft. In the spring the water is not clear, but otherwise is fine water. There are two reservoirs in Jasper, but only one is in use.

#### ELKHART COUNTY.

Bristol.—There is no public supply in Bristol.

Elkhart.—The Elkhart Water Company, a corporation mainly owned by Chicago capitalists, was built in 1884. This supply consists of five dug wells 34 feet in depth, in gravel mostly. The water is medium soft and gets yellow after a fire. The mains are of iron and the service pipes lead. About two-thirds of the population use the water.

Goshen.—In 1880 the city of Goshen built a public supply. There are two open wells 40 feet in diameter and 35 feet deep, with a sand bottom, and this water is pumped to a standpipe. The water has an irony taste. About 27 miles of distributing iron mains with iron and lead service pipes are in use. About 3,000,000 gallons are consumed daily. Probably only 100 families use the water, as wells are plentiful and that water is used. The public supply is good.



## CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF CONNERSVILLE PUBLIC SUPPLY.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
90	Nov. 2, 1905.....	S. earthy .....	.1	None .....	S.....	.0010	.0080	.1500	.0006	.20	35.4	27.2	.....	.048	.....	.....
89	Nov. 2, 1905.....	S. earthy .....	.1	None .....	S.....	.0026	.0086	.1200	.010	.30	35.5	26.9	.....	.00	.....	.....

## CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF COVINGTON PUBLIC SUPPLY.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
208	Feb. 19, 1906.....	None .....	0.0	None .....	V. s. ....	.0034	.0034	1.2	.00034	3.30	63.6	47.3	14.1	trace	.....	Good.

**Nappanee.**—This town owns a bored well 160 feet deep. The water is pumped into a tank 20 feet in diameter and 24 feet deep, with a capacity of 75,000 gallons; from this the water flows through six miles of iron mains. Very often an unpleasant odor and taste develops. About 300 families, or 50 per cent. of the people, use the water, and there are 200,000 gallons used daily. There are also many private wells in use.

**Middlebury.**—There is no regular public water system in this town. There are three wells from which six or eight families get their water, but the majority of the people have their own wells. Some of these wells are driven, a few are drilled, and there are still a few open wells in use.

**Millersburg.**—Every one in this town owns their own well, most of them being the tubular wells. There may be a very few open wells still in use. The wells go through sand and clay loam one foot, yellow clay two feet to eight feet, sand and gravel 10 to 20 feet, and water is reached 12 to 20 feet from the surface.

#### FAYETTE COUNTY.

**Connersville.**—In 1869 the city of Connersville had a public water system built by the Holly Water Works Co., of Massachusetts. This water comes through a hydraulic canal which is fed by the west fork of Whitewater river and is pumped from the canal into the city mains. The watershed consists of 250,000 acres, partly wooded, partly cleared and having about 6,000 inhabitants thereon. The flow of the stream is about 5,000,000 gallons daily. The water at times develops an odor of decaying mosses and grasses and is soft. Fifteen to eighteen miles of distributing mains are in use. These are of iron, with lead and iron service pipes. The supply is ample for fire purposes, but is not good for drinking purposes, and nearly all the people use well water for domestic supply. About 1,000,000 gallons per day of the city water is used.

#### FLOYD COUNTY.

**Georgetown.**—Four dug wells supply this town with its water. These wells are 43 feet, 41 feet, 37 feet and 28 feet deep and are all seep wells. One of them develops a sulphur odor and taste at

times. The water is hard. One of these wells fills up by an underground supply about 10 feet from the top at every large rain. About 50 per cent. of the population use this supply.

#### FOUNTAIN COUNTY.

Attica.—In 1889 Attica rebuilt her public water supply. The supply is from bored wells 100 feet deep and bored through loam, gravel, water, clay, hard pan, into the gravel and sand containing the water used. This water is pumped to a covered reservoir 200 feet above pump, which has a capacity of 500,000 gallons. The flow of the water is 1,000,000 gallons per 24 hours. There are six or seven miles of cast iron mains in use, with galvanized iron service pipes, and 600 families or about 98 per cent. of the population use the water, the average daily consumption being 275,000. There are but few private wells in use.

Covington.—The Covington Light and Water Co. built in 1893 and owned by a corporation, furnishes the water in this town. There are two springs which are fed by large streams of water. The springs are about 15 feet deep and 18 or 20 feet square. The water is pumped to a standpipe about 100 feet high and about 16 feet in diameter. There are eight or ten miles of cast iron mains. The service pipes are white metal. About 50,000 gallons per day are used, and about 80 per cent. of the people use the water. The water has been analyzed several times and has always been found to be a pure supply.

Hillsboro.—Private wells, which are driven from 70 to 85 feet deep furnish the water supply at this place.

Veedersburg.—The town of Veedersburg owns a system of two bored wells which was built in 1898. These wells are 36 feet deep, going through sandy soil, gravel, subsoil, while the underlying strata is shale, and 65,000 gallons of water are used each day. The water is pumped to a standpipe holding 90,000 gallons, from which the water flows through two and one-half miles of cast iron mains. Service pipes are of galvanized iron. About 33 per cent. of the inhabitants use this supply. The area of the watershed is eight acres, with about 25 inhabitants thereon.

Wallace.—No public system. Private wells dug from 22 to 40 feet and natural springs supply the water. Town is well drained by natural waterway.

## FRANKLIN COUNTY.

Brookville.—Brookville owns its own public water supply. It was built in 1891 by Thomas Hardman and the water comes from a stream. It is pumped to a reservoir. At times it becomes muddy and fishy, but in winter is clear and good. Four-inch, 8-inch and 10-inch cast iron mains are used, with galvanized iron for service pipes. Seventy-five per cent. of the families use the water, but it is not used for cooking. All the people use cistern water for drinking and domestic purposes.

Laurel.—There are several town wells in Laurel, and these with private wells furnish the supply. Most of the wells are driven, going through gravel and alluvial deposit. In the main part of town water is found at a depth of 21 feet, and in the upper part of town at 30 to 40 feet. One dug well which belongs to the town is 48 feet deep. The dug well in the main part of town is the one mostly used. Both these wells are sealed with cement.

Mt. Carmel.—No public supply.

Oldenburg.—No public supply.

## FULTON COUNTY.

Kewanna.—Supply for Kewanna is from private wells from 65 to 90 feet deep. Water hard, containing much lime.

Rochester.—In 1893 the town of Rochester built its public water supply. The water is taken from a lake three and one-half miles square. It is about 20 feet deep, with muck and sand bottom, and is fed by springs and Mill creek. The watershed consists of seven square miles of cleared land and about three square miles of wooded land, with 200 inhabitants living thereon. There are many picnic parties along the shore of the lake. The water is pumped to a standpipe that holds 105,000 gallons. The water has an unpleasant odor, like steam from heated, stale rain water, and is very soft. Ten miles of iron mains are in use and the service pipes are of lead and galvanized iron. About 150 families, or 25 per cent., use on an average 400,000 gallons per day. This is not used for drinking at all, as every family has a private well.

## CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF ROCHESTER CITY PUBLIC SUPPLY.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
443	July 31, 1906.....	Earthy.....	5 +	V. s.....	s.....	.0020	.0324	.0100	.0003	.3	19.2	12.7	8.6	Trace	*	Bad.

\* Gas formers.

## CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF FAIRMOUNT PUBLIC SUPPLY.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
599	Sept. 20, 1906.....	None.....	0.0	V. s.....	V. s.....	.0050	.0124	.0700	.0010	15.0	107.0	76.9	32.1	0.0	*	Doubtful.
601	Sept. 20, 1906.....	V. s.....	0.0	V. s.....	S.....	.0500	.0028	.0700	.0003	11.8	61.2	38.2	32.8	.03	....	Good.
602	Sept. 20, 1906.....	None.....	0.0	V. s.....	V. s.....	.0034	.0126	.0700	.0008	15.5	84.1	62.7	31.9	0.0	*	Doubtful.

\* Gas formers present.

## GIBSON COUNTY.

Ft. Branch.—No public supply.

Hazleton.—Wells, cisterns and springs furnish the water for this town. Land is well drained.

Oakland City.—In the fall of 1903 a private stock company built the water system which furnishes Oakland City with its supply. The water is taken from a pond covering about 19 acres and with an average depth of 12 feet. This has a mud bottom. The watershed is about 70 acres in extent with nine inhabitants living on it. The water is pumped to a standpipe having a capacity of 60,000 gallons. In the summer a slight odor is noticeable. About four miles of cast iron mains are in use, having galvanized iron service pipes. About 200 families, or 40 per cent., use 50,000 gallons per day. The water is soft.

Owensville.—No public supply.

Patoka.—Most of this water supply is driven wells from 10 to 28 feet deep. Sandy soil with gravel underlying.

Princeton.—The Princeton Water & Light Co., a private company, was built in 1893. The water is taken from the Patoka River. The watershed consists of 350 square miles, 75 miles of which are timbered lands and the balance cleared. Population averages 30 to the square mile. The normal flow of the Patoka River is about 4,800 gallons per second. There are several small towns located above the water station and sewage is received in the river above the intake. A standpipe with a capacity of 120,000 gallons is used. The water is soft and has an unpleasant odor and taste at times. Ten miles of cast iron mains with galvanized service pipes are used. Three hundred thousand gallons per day are consumed. About 200 families, or 30 per cent., use this supply, but there are also 600 wells in the town.

## GRANT COUNTY.

Fairmount.—Fairmount owns its own supply, which was built in 1894 by the Howe Pump Co., of Indianapolis. This supply consists of six artesian wells, from 40 to 100 feet in depth. These wells are bored through black loam, subsoil, blue clay, underlying strata limestone. The water is pumped by suction and forced through mains by pressure. The water is hard. They have five

miles of cast iron mains, with galvanized iron service pipes. Four hundred and seventy-five families, or 10 per cent., use the water, and there are many wells in the town.

Gas City.—In 1898 the Seckner Contracting Co., of Chicago, built for Gas City its water supply. This is bored wells 300 feet in depth, through sandy loam with sandy subsoil. The water is forced from wells into reservoir by air compression. The reservoir has a capacity of 4,500 barrels, and is 45 feet in diameter and 12 feet deep. There are 10 miles of cast iron mains and galvanized iron service pipes. Four hundred and forty taps are in use, or 66 2-3 per cent. of the population use the water. There are also private wells used.

Marion.—Wells from 120 to 200 feet deep bored into stone furnish the water supply for Marion, and are owned by the city. The reservoir which holds the water has a capacity of 900,000 gallons, and the new one when completed will hold 2,000,000 gallons. This water has an odor and taste of gas. Twenty-five miles of mains of cast iron, with galvanized service pipes, are used. Twenty-six hundred families, or 75 per cent., of the population, use this water and about 1,500,000 gallons per day are consumed. The water from one of the wells is of a medicinal character.

Upland.—The Upland Water Works Co., a private corporation, furnishes the water supply for this town. The works were built in 1892. The water is from a drilled well 250 feet deep, 50 or 60 feet being in limestone. The soil is clay subsoil, blue clay, and perhaps a strata of gravel. The water is pumped direct into the mains by a force pump. The water is hard. About two miles of distributing mains are used, these and the service pipes being of galvanized and wrought iron. The water was analyzed several years ago by the State Board of Health. One hundred and eighty-five families, or 75 per cent., use this supply. There are several private wells in the town, being either drilled or bored to gravel 100 feet or more.

#### GREENE COUNTY.

Bloomfield.—The Home Light & Water Co., built in 1904 by Geo. Cadogan Morgan, of Chicago, supplies Bloomfield with its water. This is from wells 275 feet deep, capable of supplying 275,000 gallons daily. These wells are bored through 12 feet of

clay, then sand rock the balance of the way. It is pumped to a standpipe, this holding 35,000 gallons. The water tastes and smells of sulphur and is soft. The cast iron mains are four and one-half miles in extent, and the service pipes are of galvanized iron. The water has been analyzed by Robt. E. Lyons, of Indiana University. Ninety-two families, or 25 per cent. of the population, consume 30,000 gallons per day.

Linton.—The Linton Water Co., a private company, built in 1902 by F. H. Beeman & Co., Louisville, Ky., furnishes the water supply of Linton. There are six bored wells averaging 85 feet in depth, and now furnishing 300,000 gallons per day, which is half the capacity of the wells. The wells are bored through clay loam, then 25 to 30 feet blue clay and then 25 to 30 feet good gravel, in which the water is found. The water is forced into the mains by direct pressure, there being  $11\frac{1}{2}$  miles of cast iron mains in use. The service pipes are galvanized wrought iron. The water was analyzed in 1902 by Dr. J. N. Hurty, of Indianapolis. Four hundred and fifty to 500 families, or 25 or 30 per cent., consume daily 300,000 gallons. There are a great many private wells used, practically all shallow wells, some of them dangerous. The public supply wells are drilled in Buck Creek Valley, a small stream which goes dry often, in fact is probably dry seven months out of the year. This empties into Bee Hunter ditch about a mile south of water station.

Lyons.—No public system. There are a few drilled wells from 120 to 200 feet deep, but the majority are about 15 to 30 feet deep. The soil is mostly clay and black loam, the black loam being decayed vegetable matter.

Worthington.—The Straw Board Rivers & Co., a private concern, built in 1897, furnishes the water supply for Worthington. This consists of wells bored 50 feet. The water is pumped to a standpipe which is 20x100 feet.

#### HAMILTON COUNTY.

Atlanta.—No public supply.

Arcadia.—There are two public wells drilled 220 feet deep. The majority of the citizens own their own drilled wells, ranging in depth from 50 to 250 feet.



CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF NOBLESVILLE PUBLIC SUPPLY.  
Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
248	March 30, 1906.	None.	0.0	V. slight.	V. slight.	.0046	.0019	.0330	.0006	1.6	37.5	30.0	15.0	.02	—	.....
249	March 30, 1906.	None.	0.0	None.	V. slight.	.0050	.0020	.0500	.0005	1.6	47.5	36.6	14.9	.0000	—	.....
275	April 16, 1906.	None.	5. —	None.	None.	.0020	.0028	.1200	.0000	1.2	48.6	35.6	16.4	.01	—	.....
391	June 18, 1906.	None.	0.0	None.	V. slight.	.0070	.0016	.1000	.0003	1.10	43.7	31.5	14.8	0.0	—	.....
395	June 25, 1906.	V. sl. earthy.	0.0	Slight.	Mkd. brown.	.0010	.0031	.1000	.0000	1.2	49.2	35.0	14.6	.10	—	.....

CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELLS AT WESTFIELD.  
Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
172	Jan. 3, 1906.	None.	5. —	V. s.	Mch. reddish.	.0000	.0010	.2500	.0012	26.8	128.0	92.6	25.9	.0332	—	Bad.
173	Jan. 3, 1906.	S. earthy.	0.0	None.	V. much flocc.	.0364	.0048	.9000	.0012	1.4	47.4	40.0	22.6	.0166	—	Bad.

172. Location unknown. 173. Edge of sidewalk.

Carmel.—No public system.

Cicero.—No public supply.

Noblesville.—The Noblesville Water & Light Co., a private company, built in 1891 and 1892, gets the supply for Noblesville from driven wells. There are 15 of these wells, ranging in depth from 60 to 70 feet through hard pan or blue clay into a gravel water bed. There are also two limestone wells 350 feet deep, operated by air compressor into reservoir, from which the supply is pumped into the water mains. The water from the other wells is pumped direct. The reservoir holds about 50,000 gallons. There are 12 miles of cast iron mains, with lead and galvanized iron service pipes, in use. Five hundred and fifty or 600 families use this supply, or about 20 per cent., and 400,000 gallons daily are consumed.

Sheridan.—No public supply.

Westfield.—No public supply.

#### HANCOCK COUNTY.

Fortville.—No public supply.

Greenfield.—Greenfield's supply is from driven wells the water from which is pumped. There are several miles of cast iron mains. About 90 per cent. of the people use the supply, and 200,000 gallons daily are consumed.

#### HARRISON COUNTY.

Corydon.—There are two public water supplies in Corydon. The town has a spring which furnishes water, and a private concern, the W. H. Keller Co., built in 1903, which gets its supply from the creek. This water is pumped into a reservoir 60x80 and 8 feet deep. There are about five and a half or six miles of mains of cast iron used. Service pipes are of galvanized iron. About 200 families, or 50 per cent., use the supply.

Elizabeth.—This town is supplied with water from two public wells bored 120 and 78 feet in depth, one dug well 30 feet deep, eight private wells and two private springs.

Laconia.—No public supply.

Mauckport.—Public wells from 60 to 70 feet, bored, and one dug.

New Middletown.—No public supply.

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF NEW MIDDLETOWN PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
727	Oct. 29, 1906 .....	None .....	0.0	Marked.....	Mkd. earthy.	.0004	.0088	.8000	.0003	2.0	58.5	47.0	34.8	.02	+	Bad.

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF NEW CASTLE PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
485	Aug. 15, 1906 .....	None .....	0.0	Slight.....	Slight .....	.0006	.0064	.0500	.0002	.7	41.4	32.7	33.3	.04	-	Good.

**HENDRICKS COUNTY.**

Brownsburg.—No public supply.

North Salem.—No public supply. One well is 800 feet deep with flowing water.

Plainfield.—No public supply.

**HENRY COUNTY.**

Knightstown.—This town is supplied with water from a system of wells, which was built in 1894 by the Boughen Engineering Co., of Cincinnati. The wells are all bored to about 60 feet in depth, through four feet of soil, 15 feet of gravel, 40 feet of shale into limestone. There are eight of these wells. This water is pumped direct in day time, but standpipe service is used at night. The capacity of the standpipe is 100,000 gallons. Six miles of cast iron mains are used and the service pipes are galvanized iron. Two hundred and seventy-five families, or 50 per cent., use the supply, which averages about 60,000 gallons, consumed daily.

New Castle.—In 1889 this city built its own public water supply, consisting of wells drilled from 106 to 170 feet deep. The water is on top of a limestone strata. It is pumped to two reservoirs with a capacity of 9,000 gallons each. These are 10 feet deep by 40 feet wide. The water is hard. Cast iron mains 10 miles in extent are used, with galvanized iron service pipes. About 750 families, or 75 per cent. of the population, use the water, and the average daily consumption is 750,000 gallons.

Middletown.—Middletown's supply consists of three artesian wells bored by the town in 1896. These wells are 86 feet in depth and the flow is about three barrels a minute. There is an odor of sulphur at the dead ends of the mains. Four or five miles of cast iron mains in use. Galvanized iron used for service pipes. Two hundred families, or 50 per cent. of the population, use this supply.

**HOWARD COUNTY.**

Greentown.—A private plant has recently been installed in this town by the Delon & Co. Water Supply Co. The supply is a drilled well 100 or 125 feet deep of 4-inch galvanized iron pipe. The water is pumped into a covered reservoir 12 feet in diameter

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF MIDDLETOWN PUBLIC SUPPLY.**  
Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Free. Ammonia.	Nitrates.	Nitrites.	Chlorine.	Total Solids.	Fixed.	Hardness.	Iron.	Remarks
434	Sept. 18, 1906	None	0.0	None	None	.0000	.0032	.2400	.0000	2.6	48.1	33.3	22.3	•

\* Gas formers present.

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF HUNTINGTON PUBLIC SUPPLY.**  
Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Free. Ammonia.	Nitrates.	Nitrites.	Chlorine.	Total Solids.	Fixed.	Hardness.	Iron.	Remarks
340	May 17, 1906	None	5 —	V. s.	Mch. reddish.	.0004	.0028	.0600	.0000	1.8	44.0	35.9	.035	Good.
346	May 21, 1906	None	0.0	V. s.	S. earthy.	.0034	.0040	.0800	.0040	2.4	44.3	36.4	.02	Good.
349	May 24, 1906	S. veg	0.0	None	S. reddish	.0004	.0078	.0300	.0000	2.2	47.4	37.8	.001	Good.
380	May 26, 1906	V. s., foul	0.0	None	V. s.	.0002	.0010	.0800	.0020	2.9	48.4	35.6	.024	Good.
366	May 28, 1906	Earthy	0.0	V. s.	Mch. reddish.	.0014	.0038	.6600	.0010	1.8	43.3	37.6	.05	Good.
698*	Oct. 22, 1906	V. s.	0.0	S.	S. reddish	.1050	.0020	.0000	.0010	16.8	75.7	57.8	.10	Bad.

\* Not the same supply as other samples.

by 12 feet in height. As yet there has been only one mile of mains laid and this is of galvanized iron. About 25 families are using the water as yet. There are also many drilled wells in the town.

#### HUNTINGTON COUNTY.

Andrews.—No public supply.

Huntington.—In 1890 a public supply of drilled wells was established for the city of Huntington by William McGrew. These wells are drilled to a depth of 100 feet through soil, blue clay, subsoil, clay, underlying strata stone. The water is pumped to a standpipe having a capacity of 500,000 gallons. At times the water has the smell and taste of mossy river water, but it is believed if the mains were thoroughly flushed the water would be all right. There are over 22 miles of distributing mains used, and they are of cast iron pipe with lead service pipes. One million gallons daily are consumed and 1,500 families, or 65 per cent., use the water.

Markle.—No public supply.

Roanoke.—Private wells furnish the supply for this town.

#### JACKSON COUNTY.

Brownstown.—In 1898 the Phoenix Construction Co., of Chicago, built for Brownstown their water supply. This consists of one dug well 15 feet in diameter and 25 feet deep, with a capacity of 400 gallons per minute in summer, and in winter it can not be exhausted at all. Water enters through strata of gravel 20 to 25 feet deep, which extends to White River, one mile distant. Water comes to within 12 feet of the surface in summer. The soil is sandy. The water is pumped into a reservoir holding 90,000 gallons. There are two miles of mains of cast iron with service pipes of galvanized iron. About 33 1-3 per cent. of the people, or one hundred families, use the water.

Seymour.—The Seymour Water Co., a private company, had its plant built in 1889 by W. E. McMillan. The water is taken from east fork of White River and pumped to a standpipe 16 feet in diameter by 100 feet high. The water shed includes all that portion of the state drained by east fork of White River above the intake of the water supply. No sewage or waste is received in the stream nearer than Columbus, thirty miles above.

## CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF BROWNSTOWN PUBLIC SUPPLY.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Iron.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.		
411	July 18, 1906	S. foul	0.0	None	None	.0010	.0050	.1500	.0010	3.10	68.0	49.5	20.0	* Doubtful

\* Gas formers present.

## CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF MADISON PUBLIC SUPPLY.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Iron.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.		
288	April 21, 1906	None	0.0	V. s.	S. red	.0204	.0058	.3000	.0080	14.00	133.2	103.0	27.0	Bad.
289	April 21, 1906	Earthy	—	Mkd	Mch. clay	.0022	.0096	.0600	Tr'ce	.80	17.1	14.3	2.5	*
290	April 21, 1906	None	0.0	V. s.	Mch. red	.0310	.0048	1.000	.0040	8.5	131.8	104.6	27.2	Bad.
326	May 12, 1906	Earthy	Mud.	Slight	Slight	.0006	.0064	.0700	.0000	1.4	22.7	18.1	—	Tr'ce

289 and 326. Ohio river water. \* Gas formers present.

The water is soft. Cast iron pipes 16 miles in length, with wrought iron service pipes. About 550 families, or from 20 to 30 per cent. of the people, use the supply. About 1,000,000 gallons daily are used. The water company has completed recently a filtration plant with a capacity sufficient to filter the entire supply for the city. This is known as the Continental-Jewel filtration system.

Crothersville.—No public supply.

#### JASPER COUNTY.

Remington.—The Remington water works, owned by the town and built in 1897, gets its supply from bored wells. There are three of these wells; one a 1-inch well, is 360 feet deep, 2-inch well is 250 feet deep, 3-inch well is 200. The soil is black loam, underlaid by slate, then hard rock, almost like marble. The water is pumped to a reservoir.

Rensselaer.—Rensselaer owns its own water supply, which was built in 1898 by the Chicago Bridge & Iron Co., and which consists of a drilled well. This is drilled in rock something over 800 feet deep. A tank holding 100,000 gallons and over 100 feet high has the water pumped to it. There are five miles of cast iron mains, with lead and galvanized iron service pipes. Two hundred and seventy-two families, or 50 per cent. of the population, use the supply, and the average daily consumption is 300,000 gallons. There are also a good many private wells in use, all drilled in the rock.

#### JAY COUNTY.

Dunkirk.—A system of four driven wells, built in 1894, constitutes the water supply of Dunkirk. These wells are driven 200 feet and the water is pumped to a reservoir. The water is limestone. About 10 miles of distributing mains of iron, with lead and galvanized iron service pipes, are in use. Three hundred and fifty families, or 60 per cent., use the supply.

Portland.—Portland owns a supply of artesian wells built in 1890 by Fred Bimel. These wells are 100 feet deep with a flow of 300,000 gallons daily. They are driven through clay soil into limestone. There are 15 miles of cast iron mains, with lead serv-



ice pipes, which are supplied by gravity. Three hundred thousand gallons are consumed daily. About 300 families, or 50 per cent., use the water. There are also private wells in use.

Redkey.—No public supply.

#### JEFFERSON COUNTY.

Madison.—This city owns its own public water supply, built in 1871, and which gets its supply from the Ohio River and five wells. The current of the river is two miles per hour. The wells are bored, average depth being 100 feet, through fine sand all the way. The supply is good, though hard. The water is pumped to a reservoir 80 feet in diameter and 20 feet deep with a capacity of 720,000 gallons. Twenty miles of distributing mains of cast iron, with iron and lead service pipes, are used, and 1,100,000 gallons are consumed daily. Six hundred and fifty families, or 95 per cent., of the people use the supply.

Brooksbury.—Supply is from private cisterns.

#### JENNINGS COUNTY.

Vernon.—The town of Vernon owns its public supply, which was built in 1893, and which gets its water from the Muscatatuck Creek. The watershed is from 25 to 50 square miles. The water is pumped to a standpipe eight feet in diameter and 75 feet high. The water is soft. Two miles of cast iron mains, with cast iron service pipes, are in use. Eighty families, or 60 per cent. of the people, use about 20,000 gallons daily. None of the people use the water for drinking or domestic purposes, as that is supplied by private cisterns.

North Vernon.—This town built its own public supply in 1892 and gets the supply from the north fork of the Muscatatuck River and also from numerous springs. The watershed area is 15 miles long and two miles wide. Fifty per cent. is cleared. The water is pumped to a standpipe, which holds 90,000 gallons. The water is soft. Six miles of cast iron distributing mains are used with cast iron service pipes. Three hundred and fifty families, or 50 per cent. of the population, use the supply, and 250,000 gallons daily are used. The plant was built by the Bohen Engineering Co., Cincinnati.

## JOHNSON COUNTY.

Edinburg.—In 1893 Edinburg had built for the town a dug well, Stevens & Bedwards, contractors, Logansport, Ind., building the same. This well is 20 feet deep and 16 feet wide, and dug in a gravel bed. It is walled with an 18-inch wall of hard brick laid in cement, gravel bottom. The water ordinarily stands about 10 feet in the well, but with the pump running continuously the water stands about four feet in the well. It is pumped to a standpipe having a capacity of 42,500 gallons. Water is hard. Four-inch, 6-inch, 8-inch and 10-inch glazed iron pipes are used for the four and a half miles of distributing mains; galvanized iron is used for service pipes. The supply is used by 125 families, or about 33 per cent. of the population, and 169,205 gallons are consumed daily.

Franklin.—The Franklin Water & Light Co., owned by the city and built in 1890, furnishes the water supply for this town. The supply is from bored wells 150 to 200 feet deep with the water pumped to a standpipe and reservoir, the capacity of the standpipe being 12,000 gallons. At times the water develops a smell and taste like pond water. The supply is hard. Cast iron mains eight miles in length, with galvanized iron service pipes, supply the 275,000 gallons daily, which is used by 50 per cent. of the people. Private wells and cisterns are also used.

Greenwood.—The Citizens' Water & Light Co., a private company, built three years ago, furnishes Greenwood with its public water supply. The water is from an 8-inch cased drilled well 68 feet deep, which is pumped into the mains. There are three and a half miles of cast iron distributing mains, the service pipes of which are of galvanized iron and lead. There are about 20 families, or 5 per cent. of the people, using this supply, and 50,000 gallons are used daily for all purposes. Nearly all the families have their own wells.

## KNOX COUNTY.

Vincennes.—The Vincennes Water Supply Co., a private corporation, built in 1886 by S. R. Bullock & Co., of New York, gets its supply from the Wabash River. The water is pumped to a standpipe after being filtered, the capacity of the standpipe being 600,000 gallons. The distributing mains are of cast iron,

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF GREENWOOD PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen <small>as</small>		Chlorine.	Solids.		Hardness.	Iron.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.			
555	Sept. 8, 1906.....	None.....	0.0	None.....	None.....	.0000	.0060	.0220	.0003	5.0	56.2	45.0	29.6	0.0	* Good.

\* Gas formers present.

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF VINCENNES PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen <small>as</small>		Chlorine.	Solids.		Hardness.	Iron.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.			
261	April 5, 1906.....	None.....	5—	V. s.....	V. s.....	.0064	.0123	.1070	.0003	1.0	18.9	16.0	5.0	.00	— Good.

and enameled, there being 18 miles of mains in use. The service pipes are galvanized iron. Three hundred families, or 10 per cent. of the population, use this supply, and the average daily consumption is 800,000 gallons. At least 90 per cent. of the people use the water from driven wells in their yards.

#### KOSCIUSKO COUNTY.

Claypool.—No public supply.

Etna Green.—No public supply.

Leesburg.—Private driven wells furnish the supply of this town.

Mentone.—Dug, driven and bored wells furnish the water for this town. Some of it is of bad quality.

Milford.—Milford owns a system of wells built in 1902, which furnishes the public water for this town. There are four wells driven 408 feet to gravel and sand. The water is pumped to a standpipe. Over two miles of distributing mains of cast iron, with galvanized service pipes, are in use. Fifty-five families, or 25 per cent., use this supply.

Pierceton.—In 1897 this town had a tubular well built, eight inches in diameter, by the C. L. Olds Co., of Ft. Wayne. This well is 212 feet deep through soil, clay, gravel and sand. It is pumped into a supply tank with a capacity of 500 barrels. Cast iron pipe is used for the distributing mains, of which there are about two miles, and gas and lead pipe are used for service pipes. Seventy-five per cent. of the population use the supply and about 15,000 to 20,000 gallons daily are used.

Silver Lake.—No public supply.

Warsaw.—A private company, called the Warsaw Water Works Company, furnishes the supply for Warsaw. The water is taken from a small lake about 100 acres in area with a sandy and marshy bottom. The watershed is about 300 acres with residences half way around, farm and marsh rest of the way. There is a standpipe, but it is seldom used, though it is full at all times. The water is pumped by direct pressure. The water develops a fishy taste and smell, and at times of decaying growths. Six miles of mains of cast iron, with galvanized iron service pipes, are used. There are 725 subscribers for this supply, or about 25 per

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF WARSAW PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
57	Oct. 3, 1905	S. earthy .....	.20	Slight .....	Slight .....	.0010	.0110	.0000	.0001	.30	.....	.....	.....	.0420	1	Good.

cent. About 1,000,000 gallons per day are used. All drinking or water for domestic use is from private wells, as the public supply is not fit.

#### LAGRANGE COUNTY.

Lagrange.—Lagrange owns and operates its public water supply, which was built in 1893 by Gordon Co., Hamilton, O. This consists of six wells, average depth 90 feet, soil glacial drift with reservoir under three or more clay strata. These wells are bored and pipes driven in bore with perfect plugging. The water is pumped direct into the mains, of which there are four and one-half miles. The mains are of cast iron, with galvanized iron service pipes. There are 230 families and 50 business houses, or 55 per cent. of the population, using the supply. These wells are supposed to be bored into a large lake or reservoir which is struck at 90 feet. The water is very abundant and potable.

Wolcottville.—No public supply.

#### LAKE COUNTY.

Crown Point.—In 1895 and 1896 the Seckner Contracting Co. built a system of wells for Crown Point. These wells are of six-inch pipe and are 81, 75, 69 and 57 feet. The soil is clay and water sand. This water is pumped to a reservoir and then to a standpipe. The standpipe is 12x100 feet and the reservoir is 8x10 feet. The water is hard. Six miles of mains are used of cast iron. The service pipes are galvanized iron and lead. About 40 per cent. of the town use the water and 100,000 gallons per day are consumed. Many private wells are also used.

East Chicago.—In 1894 the city of East Chicago built their public system. This has been in the hands of a receiver since November, 1903. The water is from Lake Michigan and is pumped to a standpipe 16 feet in diameter and 95 feet high. The lake receives waste from the Standard Oil Company's plant at Whiting. The water tastes and smells of petroleum and decayed organic matter and is soft. Twenty-five miles of cast iron mains, with lead and galvanized iron service pipes, are used. Fifteen hundred to 1,600 families, or 95 per cent. of the population, use this supply, and 3,000,000 gallons daily are consumed.

## CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF HOBART PUBLIC SUPPLY.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia			Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.		Nitrates.	Nitrites.		Total.	Fixed.				
369	June 1, 1906 .....	S. oily .....	5—	None .....	V. s. red .....	.0120	.0112		.5000	.0180	3.6	37.2	27.5	8.4	.03	—	Bad.
370	June 2, 1906 .....	Earthy .....	6—	S. ....	Ex. earthy ..	.0018	.0154		.4500	.0003	2.7	33.9	25.0	8.7	.02	*	Bad.
371	June 1, 1906 .....	Earthy .....	6—	V. s. ....	V. s. earthy ..	.0054	.0123		.3000	.0040	2.4	32.9	25.3	8.6	.015	—	Bad.
372	June 1, 1906 .....	S. earthy .....	5—	None .....	Mch. red .....	.0080	.0150		.4300	.0200	3.4	39.8	38.9	9.0	.015	—	Bad.
373	June 1, 1906 .....	S. earthy .....	6—	S. ....	Ex. red .....	.0020	.0190		.5000	.0002	3.4	39.1	27.0	9.0	.04	—	Bad.
374	June 1, 1906 .....	Earthy .....	6—	Mkd .....	Ex. earthy ..	.0014	.0270		.5200	.0003	2.5	36.7	27.3	8.8	.05	—	Bad.

\* Gas formers present.

**Hammond.**—Hammond owns its own public supply, which was built in 1892 by the Lake Water Co. The source of the supply is Lake Michigan. The lake receives sewage, etc., from South Chicago, Ill. The water is pumped direct from the lake into the mains, of which there are from 65 to 67 miles. There is an odor and taste of petroleum from the Standard Oil Co. at Whiting. The mains and service pipes are of iron. The entire population uses this supply and about 6,000,000 gallons per day are consumed.

**Hobart.**—The supply of Hobart is from wells which were built by John P. Dales. These wells are dug and driven through subsoil, and the water is pumped to a standpipe. There are four miles of cast iron mains, 8-inch, 6-inch and 4-inch, and 115 families use the supply, or 35 per cent. of the population. Twenty-two thousand gallons per day are used. The standpipe holds 56,000 gallons.

**Lowell.**—Lowell owns an 8-inch bored well 187 feet deep, which was built for the town in 1898 by the John P. Dales Co., of Chicago. The well is bored 80 feet through solid rock, and the water rises to within five feet of the surface. The capacity of the lift pump is 500,000 gallons per day. This water is pumped to a standpipe 100 feet high and 20 feet in diameter with a capacity of 80,000 gallons. At times the water develops an unpleasant odor and taste. The supply is soft. Cast iron mains four miles in extent and of 4-inch, 6-inch and 8-inch pipe distribute the water. The service pipes are  $\frac{3}{4}$ -inch gas pipe. Two hundred and forty families, or 70 per cent., use the supply.

**Whiting.**—The Standard Oil Co. built a plant at Whiting about 15 years ago, and still own it. The water is taken from Lake Michigan and is supplied by direct pressure. Occasionally the water develops an oily taste. Ten miles of mains are used, these and the service pipes both being of iron. The entire population, probably from 1,000 to 1,200 people, use the supply, and from 500,000 to 1,000,000 gallons per day are used.

#### LAPORTE COUNTY.

**Laporte.**—In 1870 the city of Laporte built its public water supply. The water is obtained from Pine and Stone lakes with a large well and pumps five miles east in Little Kankakee bottom.



The area of the two lakes is about one and a half square miles, depth of the lakes is estimated at 12 feet, with places 50 feet deep, sandy bottom mostly. The watershed area is about four square miles, one-fourth wooded and three-fourths cleared, with 400 inhabitants thereon. There are many summer cottages on these lakes and picnic parties are held there often. The well of the Little Kankakee is sunk at the foot of the eastern slope, upon the marsh, and is of brick. It is 30 feet in diameter, 25 feet deep and is covered. The bottom is sand. This is pumped by electricity, which is generated at the pumping station at Laporte. The water is distributed from the reservoir by Nordyke pumps. The reservoir is part of Lily Lake fenced off and is about 60 feet in diameter and five feet deep. The water is hard and the water from the well has considerable mineral salts in it. Cast iron is used for the mains and wrought iron for the service pipes. One million gallons a day are consumed, and about 50 per cent. of the population use the water, but it is not used for drinking or domestic purposes as that supply is all from private wells.

Michigan City.—The Michigan City Water Co. was established in 1888 and the city now controls it and owns most of the stock. The state also has a water plant for supplying the State Prison. The water is taken from Lake Michigan, and is supplied by direct pressure. At times the water develops an unpleasant odor and taste. It is soft, and there are 18 miles of mains used. These are of cast iron, and the service pipes are iron and lead. About 1,300 families, or 25 per cent. of the population, use the supply, and 2,700,000 gallons per day are consumed. There are many private wells used, these varying from 15 to 50 feet. The intake is at a depth of about 42 feet, not entirely below the depth of driftwood. It is also at the distance from the shore where slush ice is common and often the current takes the sewage from the city at least into the neighborhood of the intake. But when the conditions are such as were evidently contemplated when the plant was built, pure water is obtained.

Westville.—No public water supply.

#### LAWRENCE COUNTY.

Bedford.—This city owns its water plant, which was built in 1892. The supply is taken from the east fork of White River, and is pumped to a standpipe having a capacity of 36,000 gallons.

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF MICHIGAN CITY PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.			Nitrogen as		Chlorine.	Solids.		Iron.	B. Coll.	Remarks
						Free.	Albuminoid.		Nitrates.	Nitrites.		Total.	Fixed.			
201	Feb. 6, 1906.....	None .....	0.0	Slight .....	None .....	.0080	.0050		.0050	.0003	.60	17.0	13.3	5.4	—	Good.

**CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELLS AT BEDFORD.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.			Nitrogen as		Chlorine.	Solids.		Iron.	B. Coll.	Remarks
						Free.	Albuminoid.		Nitrates.	Nitrites.		Total.	Fixed.			
646	Oct. 12, 1906.....	None .....	0.0	V. s. ....	V. s. ....	.0010	.0020		.1200	.0020	15.20	84.0	60.7	.05	—	Bad.
647	Oct. 12, 1906.....	None .....	— 5	V. s. ....	S. reddish ..	.0000	.0024		.0000	.0003	4.40	56.2	44.0	.04	—	Good.
658	Oct. 16, 1906.....	None .....	0.0	Slight .....	Mch. reddish.	.0010	.0024		.0400	.0010	11.2	80.0	59.0	.12	—	Bad.
659	Oct. 16, 1906.....	None .....	0.0	Much. ....	Mkd. reddish.	.0060	.0034		.6000	.0020	16.9	92.7	64.2	.40	—	Bad.

646. North side square. 647. Sixteenth street. 658. West side square. 659. East side square.

The water is soft and there are 10 miles of distributing mains. These mains are of cast and wrought iron and the service pipes are galvanized iron. Four hundred families, or 25 per cent., use the water, and 1,500,000 gallons daily are consumed. The water is not filtered and is not used for drinking purposes except by very few. Private wells furnish most of the drinking water.

Mitchell.—Bored and dug wells furnish the supply for this town.

Oolitic.—No public supply.

#### MADISON COUNTY.

Alexandria.—In 1894 the Segner Contracting Co. built a system of wells for Alexandria. These wells are drilled 300 to 900 feet deep, and one is a flowing well, which is connected with the pumping station by common iron pipe, but it is to be replaced with wood pipes. The water is pumped to a standpipe with a capacity of 235,000 gallons. The water is hard and at times has a slight taste of iron. About four and a half miles of cast iron distributing mains are used, with galvanized wrought iron service pipes. About 800 families use this supply and the average daily consumption is 500,000 gallons. There are also many private wells.

Anderson.—Eleven or twelve years ago the city of Anderson built a public water supply, which gets its water from White River. This stream is very variable, volume indefinite, slow current, shallow; no sewage goes in the stream within three miles above the intake of the supply at present. The water is supplied by direct pressure from clear well. There are thirty-one miles of distributing mains of standard cast iron with lead and galvanized iron service pipes. About 2,100 taps are used, or about 50 per cent. of the people use the water, and the average amount used daily is 2,000,000 gallons. There are also many private wells. A mechanical filter plant has been installed recently and is doing good work. During hot weather a grassy odor was noticeable in the raw river water, but is not in the filtered.

Elwood.—The Elwood Water Co., a private company, built in 1891, furnishes Elwood with its public water supply. The system is one of driven wells ranging from 100 to 175 feet in depth and furnishing from 15,000 to 20,000 gallons per day. The soil

# CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELLS AT MITCHELL.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Iron.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.		
566	Sept. 12, 1906.....	None.....	0.0	None.....	V. s.....	.0014	.0024	1.000	.0003	6.80	64.5	42.8	0.0	+ Bad.
567	Sept. 12, 1906.....	None.....	0.0	V. s.....	S. earthy.....	.0030	.0060	.8000	.0025	8.20	61.4	41.4	0.0	+ Bad.
603	Sept. 20, 1906.....	None.....	0.0	None.....	V. s.....	.0010	.0060	.1200	.0020	25.10	97.8	75.8	0.0	+ Bad.

566. "Bigg's" public well. 567. Corner Sixth and Main. 603. Location unknown.

# CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF INDIANAPOLIS PUBLIC SUPPLY.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Iron.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.		
378	June 1, 1906.....	S. earthy.....	None	None.....	None.....	.0118	.0072	.0700	.0000	10.2	58.5	43.4	.00	- Good.

is loose subsoil, and hardpan with an underlying strata of gravel. The water is pumped into the mains except in case of fire, when water from a reservoir is forced into the mains. At some of the hydrants there is a musty odor. Iron mains are used 17 miles in extent and iron and lead service pipes are used. Seven hundred or 800 families, or five or six per cent. of the population, use the supply and about 100,000 gallons per day are consumed. Many private wells are used, these generally being shallow or from 10 to 20 feet in depth.

**Frankton.**—In the fall of 1899 the W. H. Wheeler Co. built for the town of Frankton a public system. This supply consists of a dug well 25 feet deep, dug in water bearing gravel. The water stands 11 or 12 feet in the well, which is 20 feet in diameter. The water is hard. Three miles of mains of cast iron are used, with iron service pipes. There are about 60 or 75 taps in use, but less than one per cent. use this water for drinking, the drinking water coming from private wells. The public supply is used mostly for sprinkling lawns and streets, and 50,000 gallons daily are used.

**Ingalls.**—No public supply.

**Lapel.**—No public supply.

**Orestes.**—No public supply.

**Pendleton.**—All private wells, mostly drilled from 40 to 150 feet.

**Perkinsville.**—No public supply.

**Summitville.**—The Summitville Water Co., built in 1902 and owned by the town, furnishes the public water supply. The supply is from a drilled well 400 feet deep, drilled through Trenton rock into shale. The water at times develops an unpleasant odor and taste and is sometimes the color of brick. It is hard. Three miles of cast iron mains, with galvanized iron service pipes, are in use. Ninety families, or about 30 per cent of the population, use the water.

#### MARION COUNTY.

**Broad Ripple.**—No public supply. All water used is from private wells.

**Indianapolis.**—The city of Indianapolis is supplied with water by the Indianapolis Water Co., a private company, built in 1870. The supply is obtained from deep wells and a canal from White

River, which is dammed about 10 miles above the intake, thus providing a large storage reservoir. This reservoir or lake is largely frequented by visitors and during the summer season thousands visit the park along its shores each day. Canoeing and boating is not prohibited and all waste from the adjacent park flows into the river. The stream also receives sewage in large quantities from above the intake. The average depth of the wells is 300 feet, capacity 18,000,000 gallons every 24 hours; and the capacity of the filtration system is 24,000,000 gallons per 24 hours. The water is supplied by direct pressure system. There are 270 miles of mains used in distributing the water, and these are of cast iron with lead pipe used in the streets. There are 16,000 taps in service, and including factories and schools, etc., the number is estimated at 100,000 using the supply. The city owns and operates water works in that part of the city called Brightwood.

New Augusta.—Private wells supply this town.

Southport—No public supply.

#### MARSHALL COUNTY.

Argos.—In 1897 this town built a public supply, which consists of a well driven through soil, sand, subsoil, clay, underlying strata of blue clay. The water is pumped to a cistern which is entirely enclosed. Its capacity is 800 barrels. Cast iron is used for the mains, of which there are five miles, and galvanized iron is used for service pipes. Forty or fifty families, or 10 per cent., use the supply, and about 30,000 gallons per day are consumed. There are also many private wells driven about 20 to 30 feet.

Bourbon.—The Union Water, Light & Power Co., a private concern, built in 1899 by Duke M. Farson, of Chicago, furnishes Bourbon with its public supply. This consists of bored wells 8 inches in diameter and 150 feet deep. The water is pumped to a standpipe with a capacity of 60,000 gallons. Four miles of standard cast iron pipes are used for the mains, with galvanized iron for service pipes. About 25 families use the supply for all purposes and about 100 for sprinkling, or four per cent. for domestic purposes and 10 per cent. for all purposes. An average of 30,000 gallons per day is used. There are many private wells in this town. There is also a reservoir with a capacity of 20,000

gallons, with a force pump which is used for fire purposes. This is separate from the standpipe.

**Bremen.**—Twelve years ago the town of Bremen built a public system of wells. There are six of these wells bored to a depth of 65 feet, through soil, muck, quicksand, clay, hard pan, then limestone or slatey layer into gravel. The water is pumped to a standpipe holding 2,700 barrels. This water is hard. Iron and galvanized iron service pipes are used for the five miles of distributing mains. Two hundred thousand gallons daily are consumed and 90 per cent. of the population use the supply. There are many private wells in use.

**Plymouth.**—This town owns a system of flowing wells from 40 to 200 feet deep, which were built about 10 years ago. The water is supplied by direct pressure and contains sulphur, iron and magnesia. The mains are of iron and some wood pipes are used. The service pipes are of iron. About 150,000 gallons daily are consumed.

#### MARTIN COUNTY.

**Loogootee.**—No public supply.

**Shoals.**—No public supply.

#### MIAMI COUNTY.

**Amboy.**—Private drilled wells supply this town.

**Bunker Hill.**—No public supply.

**Converse.**—In 1892 the town of Converse had built a system of drilled wells 240 feet deep. These wells are drilled through clay, soil, subsoil, gravel, shale and rock. The water is pumped to a tank on steel trestle, with a capacity of 30,000 gallons. There is no odor or unpleasant taste, but it leaves a red deposit. The water is hard. Cast iron is used for the two miles of mains, and galvanized iron is used for service pipes. About 180 families use the supply, or 75 per cent., and 135,000 gallons daily are used for all purposes.

**Macy.**—No public supply.

**Peru.**—The city of Peru built a system of drilled wells in 1878. These wells are about 470 feet in depth and are drilled in limestone. Part of the water is pumped to a reservoir. The water is

hard limestone. There are about 25 miles of distributing mains, and these are of cast iron with lead service pipes. Probably 1,700 families use the supply, and 1,500,000 gallons daily are consumed. There are many private wells used.

#### MONROE COUNTY.

Bloomington.—The Bloomington Water Works Co., built in 1893 for the city, gets its supply from a pond which is 32 acres in area and 15 feet deep, with a mud bottom. The watershed is  $1\frac{1}{2}$  miles square and is both wooded and cleared, with three families living thereon. The water is pumped to a reservoir and from there is pumped direct into the mains. The water is filtered through a bed 60 feet square and 8 feet deep, filled with 3 feet of sand and gravel. Fourteen miles of mains are used, these consisting of cast iron pipes for distributing mains and galvanized wrought iron for service pipes. Seven hundred families, or 40 per cent. of the population, use this supply, and probably 60 per cent. use cistern water. About 30 per cent. use water filtered through charcoal and gravel.

Ellettsville.—No public supply.

#### MONTGOMERY COUNTY.

Alamo.—No public supply.

Crawfordsville.—The Crawfordsville Water & Light Co., built in 1885 by Commegys & Lewis, is owned by a private company. The supply is from springs and wells, the springs being 12 to 18 feet deep and the wells 50 to 200 feet deep. The wells are driven through soil, sand and gravel to a depth of 200 feet, then follows 400 feet of shale. The water is pumped to a standpipe from a reservoir, the standpipe being 16 feet in diameter by 175 feet high, and the reservoir is 12 feet deep and 80 feet in diameter. There are about 15 miles of cast iron mains, and wrought iron is used for the service pipes. About 500 families use the supply and 1,000,000 gallons are used daily for all purposes. There are many private wells also in use.

Darlington.—A private company owns and operates a supply for this town. The water is taken from a spring. Two miles of distributing mains are used, and these and the service pipes are of iron. Fifty families, or about  $33\frac{1}{3}$  per cent., use the supply. Many private wells are also used.





Ladoga.—No public supply.

Linden.—No public supply.

New Ross.—No public supply.

Waveland.—No public supply.

Waynetown.—No public supply.

Wingate.—Private wells furnish the supply for this town.

#### MORGAN COUNTY.

Martinsville.—In 1893 the town of Martinsville built a dug well 35 feet deep. The water is pumped direct into the mains, of which there are seven miles of cast iron. Eighty per cent. of the population use about 600,000 gallons daily. There are also many private wells in use.

Mooresville.—A private company called the Public Service Company furnishes Mooresville with its public supply. Built in 1904, this supply consists of two drilled wells. One is an 8-inch well bored 311 feet, but this is not in use. The other is 40 feet deep, then drilled through rock eight feet. This well is 14 feet in diameter, walled with brick and then an 8-inch space between the wall, and the clay is solidly concreted. This is walled down for 20 feet with the brick. Most of the water in this well rises from the bottom through drill holes and stands at a height of about 18 feet. The rate of the flow is about 150 gallons per minute. There are  $3\frac{1}{4}$  miles of mains, and these are of cast iron with galvanized iron service pipes. About 78 families use the supply, or 18 per cent. of the population, and the average daily consumption is 15,000 gallons.

Paragon.—Driven wells furnish the supply for each family.

#### NEWTON COUNTY.

Brook.—No public supply.

Goodland.—Private wells bored and dug furnish the supply.

Kentland.—Kentland owns a well which was bored in 1895 for gas and is about 1,100 feet deep, with the water supply coming from a depth of about 300 feet. This is bored through black soil, clay subsoil and sand and clay. This water is pumped to a reservoir 20 feet in diameter and 20 feet high. The water has an unpleasant odor and taste of carbon bisulphide.

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF MOORESVILLE PUBLIC SUPPLY.  
Parts in 100,000.

Laboratory Number	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia, as			Nitrogen		Chlorine.	Solids.		Iron.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.	Total.		Fixed.			
124	November 22, 1905.....	None .....	0.0	Very pronounced....	Considerable earthy.....	Tr'ce	.0014	.6000	.0001	9.4	108.4	68.5	20.3	.120	.... Good.

CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELLS AT GOODLAND.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.			Nitrogen as		Chlorine.	Solids.		Iron.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.	Total.		Fixed.	Hardness.		
167	December 27, 1905.	None.....	0.0	S.....	S. earthy .....	.0134	.0010	.0000	Tr'ce	3.2	44.8	37.4	17.0	.064	.... Good.
166	December 27, 1905.	None.....	0.0	V. s.....	S. earthy .....	.0140	.0014	.0000	.0000	3.2	49.7	41.8	17.4	.020	.... Good.

167, City Well No. 1. 166, City Well No. 2.

and is soft. Two miles of iron mains, with galvanized service pipes, are used. Eighty-five families use the water, or about 40 per cent. There are also private wells in the town. The water from the hydrants varies in color from milky to almost black.

Morocco.—Private wells bored to limestone rock furnish this town with its supply.

Mount Ayr.—Private wells bored from 50 to 200 feet supply the water for public use in Mount Ayr.

#### NOBLE COUNTY.

Albion.—In 1895 this town had Olds, of Ft. Wayne, build for it a system of driven wells. These wells are 97 feet deep and are driven through soil, black loam, subsoil, blue clay; underlying strata, gravel. The water is pumped by direct pressure and is hard. Iron pipes are used for the mains and service pipes and about eight miles of distributing mains are in use. Two hundred and fifty families, or 60 per cent. of the population, use this supply, and about 50,000 gallons daily are used.

Avilla.—Avilla owns its own water supply, which it built some time ago; this consists of a drilled well 100 feet deep, the water from which is pumped to a reservoir 18 feet high by 18 feet in diameter. The watershed is  $1\frac{1}{4}$  square miles cleared and with 750 inhabitants. The supply is slightly hard and flows through  $1\frac{3}{4}$  miles of distributing mains. These mains are of 4-inch iron pipes with  $\frac{3}{4}$ -inch galvanized iron service pipes. Seventy-five families use the water, and an average of 500 gallons daily is used. Bored wells owned by the people are also used.

Ligonier.—Sixteen years ago Ligonier built a public water supply, and in 1904 and 1905 a new plant was installed. This supply is of driven wells, four in number, 65 feet, 126 feet, 82 feet and 92 feet in depth. These wells are driven through upper soil, sand and gravel, 10 feet deep, blue clay about 30 feet deep, then water gravel. About 170 feet is sandstone and beyond that fine sheet water. The water is pumped to a tank that holds 100,000 gallons. Cast iron is used for the distributing mains, and galvanized wrought iron is used for service pipes. Nine miles of mains are used to distribute the water, and 350 taps are used, or about 50 per cent. of the people use the supply, and an average of 200,000 gallons per day is used.

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM LIGONIER PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia. Nitrogen as				Chlorine.	Solids.		Iron.	Remarks.		
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
720	October 27, 1906.....	None .....	0.0 .....	None .....	V. s. reddish.	.0104	.0014	.0000	.0005	.4	32.0	26.8	23.5	.06	....	Good.
85	October 23, 1906.....	None .....	0.4 .....	Marked .....	Cons. lime....	.0024	.0034	.0000	.0000	.2	35.8	32.7	.....	.06	....	Good.

**CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELL AT ORLEANS.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Nitrogen as				Chlorine.	Solids.		Iron.	Remarks		
						Ammonia.	Free.	Albuminoid.	Nitrates.		Nitrites.	Total.			Fixed.	
520	Aug. 25, 1906 .....	V. s.	0.0	Mkd.	Consid.	.0040	.0016	.0200	.0022	1.60	101.5	86.4	23.0	.20	1	Good.

Kendallville.—The town of Kendallville installed a public water supply in 1887, which consists of driven wells, ranging in depth from 50 to 76 feet. The wells are driven through hard pan at 30 feet to water gravel. The water is supplied by direct pressure. This town is located at the source of the Elkhart River watershed. Ten miles of cast iron mains, with galvanized iron and lead service pipes, are in use. Every 24 hours 300,000 gallons of water are pumped, and 450 families, or 50 per cent. of the people, use the supply.

#### OHIO COUNTY.

Rising Sun.—Water from cisterns and driven wells supply this town with its water.

#### ORANGE COUNTY.

French Lick.—A public supply is being installed in this town which will get its supply from a stream 3x3 feet square. The hotels use the mineral water which comes from numerous springs, and also water which is pumped from French Lick Creek and is filtered by private filters.

Orleans.—No public supply.

Paoli.—In 1895 a private company built a water supply in Paoli which was afterward sold to the town. The source of the supply is Lick Creek, which is inexhaustible and of good quality. This is pumped to a reservoir. Cast iron is used for the mains, and galvanized and black iron for the service pipes. One hundred families use this water, or about 40 per cent. There are also several private cisterns used and several public wells that are deep.

West Baden.—The West Baden Springs Co., a private company built 12 years ago, furnishes the supply for this town. The source of the water is Lost River, a stream the volume of which is unknown. The watershed is cleared land 6 square miles in area with no inhabitants. The reservoir holds 1,000,000 gallons and is 600 square feet in area and 10 feet deep. There are two miles of mains of cast iron pipe, with galvanized iron service pipes. Fifty families, or 50 per cent. of the population, use this supply. The water is soft.

## OWEN COUNTY.

Gosport.—No public supply.

Spencer.—No public supply.

## PARKE COUNTY.

Diamond.—No public supply.

Rockville.—In 1903 Rockville established a public water supply for the business portion of the town, which consists of driven wells, 106 feet deep. Twenty-four hours' flow raises five feet of water in a tank 18 feet in diameter. The well is driven through hardpan. The water is pumped to a tank holding 34,000 gallons. Iron is used for the mains and service pipes and about one-half mile of distributing mains are used. The business portion of the town and a few families living in the business section are the only ones using the supply. This is only a small plant erected by the town to supply business houses, court house, jail, electric light plant, etc. The resident district is supplied entirely by wells.

Rosedale.—No public supply. Water is from cisterns and driven wells.

## PERRY COUNTY.

Cannelton.—The Cannelton Water Works, a private corporation built about 12 years ago by W. W. Taylor, furnishes this town with its water supply. The source of the supply is the Ohio River and the water is pumped to a reservoir 150x100x20 feet. The water is soft. Four miles of distributing mains are used, these being of wood with galvanized iron service pipes. Two hundred families, or 50 per cent., use 25,000 gallons per day. The Secretary of the Board of Health reports that the water at times develops a very bad odor, and that the reservoir is nothing but a mud hole on the side of the hill, not protected in any way, and with a green scum over it most of the time.

Tell City.—Tell City owns a plant which was installed in 1902 and was built by A. C. Kennedy, of Rockport. The supply is from wells situated on the banks of the Ohio River, but water is said not to be derived from the river. The wells are 80 feet deep through soil, yellow clay, slate and gravel and sand. The water is pumped to a standpipe with a capacity of 110,000 gallons. There

are four or five miles of mains of iron used, with service pipes of galvanized iron. Fifty per cent. of the inhabitants use this supply.

Troy.—Private driven and dug wells furnish this town with its supply.

#### PIKE COUNTY.

Petersburg.—Petersburg owns a public water supply which was built in 1901, and which is called the American Light & Water Co. This supply is taken from White River, and this receives waste and sewage from all factories and cities on both forks above the intake in very large quantities. This water is pumped to a standpipe which holds 120,000 gallons. There is both an unpleasant odor, musty, and a bad taste. Five and a half miles of mains are used, these being of cast iron with galvanized service pipes. One hundred families, or 20 per cent. of the population, use the water, and 50,000 gallons per day are consumed. The schools are supplied with water from deep drilled wells.

Winslow.—No public supply.

#### PORTER COUNTY.

Chesterton.—Private wells and cisterns furnish the supply for this town.

Hebron.—No public supply.

Valparaiso.—The Valparaiso Home Water Co. furnishes the supply for this city. At present it is the property of a private company, but as soon as the city pays off the bonds against it, it will become the property of Valparaiso. The plant was built in 1886 by the Henry B. Smith Co., of Bay City, Mich. The water is taken from a lake two square miles in area and 25 feet deep, with loamy bottom. The watershed is eight square miles in area, with 50 inhabitants thereon in winter and 200 during the summer months. Picnic parties are held there frequently in the summer. This water is pumped by direct pressure. When water stands in the pipes in hot weather it develops an unpleasant odor and taste; it is soft. Thirteen miles of wood mains, with lead service pipes, are used. One thousand families, or 65 per cent., use the supply and 950,000 gallons are used daily. The greatest trouble experienced with this supply is to control the ground adjacent to the lake during the summer.



**CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELL AT CHESTERTON.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.			
303	April 30, 1906	None	0.0	None	None	.0014	.0024	.3000	.0003	3.00	46.7	38.5	11.8	S. tr.	Good.

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF VALPARAISO PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.			Nitrogen as		Chlorine.	Solids.		Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.	Total.		Fixed.				
510	Aug. 25, 1906.	None	5.0	None	Much fine	.0160	.0570	.0000	.0000	2.00	8.2	2.9	3.8	.0000		.....
511	Aug. 25, 1906.	Dec. veg.	7.0	None	Con. flocc.	.0112	.0288	.0200	.0003	.40	9.3	4.5	4.9	.01	—	.....

\* Gas formers present.

## POSEY COUNTY.

Cynthiana.—This town has three public wells two of which are drilled 180 feet deep; the other is a dug well, 40 feet deep. The schoolhouse well is drilled, but is hardly a success, as the water has been muddy at times. Most of the supply is from cisterns and dug wells.

Hensler.—No public supply.

Mt. Vernon.—The Mt. Vernon Water Works Co., a private concern, built in 1886, with a Deutch Gravity System Filter plant, added in 1903, controls the water supply for Mt. Vernon. The water is taken from the Ohio River. The nearest town above the intake is Henderson, Ky., which is 20 miles above. A stand-pipe is used with a capacity of 196,000 gallons and the supply is of soft water. Nine miles of distributing mains of cast iron, with lead and galvanized iron, are used in distributing the water to the 450 families using the supply. About 50 per cent. use the water, and 750,000 gallons daily are consumed. There are also many private wells used.

New Harmony.—The water supply for this town is from two private tanks, one owned by M. B. Pote, and which was built in 1895 for him by W. W. Robb, the other being owned by Arthur Dransfield, and built by himself five years ago. The water supply for these tanks is from driven wells about 35 feet deep, driven through sand 3 feet, hardpan two feet, fine white sand five feet, a 4-foot strata of coarse sticky gravel, with sand 10 feet, 2 feet of coarse gravel and then white sand. The water is pumped by gasoline engines to the wooden tanks holding 200 barrels and 350 barrels. The water is hard. A little over a mile of mains are used, with iron for the pipes and service pipes. Fifty families are using the water and about 1,000 barrels daily are consumed. Many driven wells are also owned by the people.

Poseyville.—No public water supply at present, but one is contemplated.

## PULASKI COUNTY.

Francisville.—No public supply. Bored wells used.

Monterey.—No public supply.

Winamac.—No public supply. A few dug wells are used, but the majority are driven wells from 40 to 60 feet deep.

## PUTNAM COUNTY.

Bainbridge.—No public supply. Town has four bored wells from 75 to 160 feet deep. Bainbridge is on the highest point on the Monon Railroad. Contiguous lands all cleared.

Greencastle.—The Greencastle Water Works Co., a private company built in 1887 by Bullock & Co., of New York, furnishes the supply for Greencastle. The water is taken from the Big Walnut stream, the source of which is in Boone County. The watershed is both cleared and wooded. The water is pumped to a standpipe 130 feet high and 30 feet in diameter. The water is medium. Cast iron mains with galvanized iron service pipes constitute the nine miles of distributing mains. Between 800 and 900 families, or 85 per cent., use the supply, and an average of 75,000 gallons per day are used. It is used by several railroads going through Greencastle and by mills. There are very few wells, say 3 per cent., the remainder use cistern water.

Roachdale.—No public supply.

Russellville.—No public supply.

## RANDOLPH COUNTY.

Farmland.—No public supply.

Lynn.—No public supply.

Parker.—No public supply.

Ridgeville.—No public supply.

Union City.—In 1873 this city built a system of wells for furnishing the public water supply. Two of these wells are dug to a depth of 35 feet, with a capacity of 275,000 gallons, dug through sand and gravel; four wells are drilled through limestone, furnishing 500,000 gallons per minute, but these wells are only used when the dug wells are not sufficient, as in case of fire or drought. The water is pumped into mains with pressure sufficient for fire. Seventeen miles of mains of wood and iron, with lead service pipes, are used. Five hundred families, or 90 per cent., use this supply, and the average daily consumption is 306,000 gallons. This supply is also used by Union City, Ohio.

Winchester.—The Citizens Water & Light Co., built by them in 1900, and which is a private company, furnishes the water supply for this town. The supply is obtained from drilled wells 200

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF GREENCASTLE PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
286	April 5, 1906	None	5—	V. s.	S.	.0014	.0164	.1000	.0000	.40	28.9	26.0	11.4	.0000	+	.....
293	April 21, 1906	None	0.0	None	V. s.	.0010	.0058	.1000	.0000	1.40	31.1	27.0	12.0	.0000	*	.....
298	April 21, 1906	None	0.0	None	None	.0010	.0034	.1200	.0000	.26	31.5	28.0	11.6	.015	*	.....
729	Oct. 30, 1906	None	0.0	V. s.	S. earthy	.0024	.0114	.0100	.0004	.50	28.0	22.9	22.6	.020	....	.....

\*Gas formers present.

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF WINCHESTER PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
448	Oct. 12, 1906	None	0.0	None	None	.1100	.0070	.0000	.0002	.8	36.4	30.2	33.1	Tr'ee	....	Good.

feet deep and 10 inches in diameter. A brick reservoir is used, 20 feet deep and 20 feet in diameter, covered. The water is pumped through the mains by direct pressure. This supply is hard. Seven miles of iron mains and iron and lead service pipes are used. About 275 families, or 50 per cent., use 500,000 gallons per day.

#### RIPLEY COUNTY.

Batesville.—The Batesville Water Works Co., built in 1902, and owned by a private company, furnishes the water supply for this town. The supply is from ponds and a spring. One pond is located in the Fair Grounds inside of the half-mile track; depth six or eight feet, with white clay bottom. There are also two small ponds connected to water works. The watershed is about 60 acres, partly wooded and with one family living on grounds. Picnic parties are frequent in summer and boating is allowed on the pond. The spring is 18 feet deep and supplies 30,000 gallons of water per day: clay and sand bottom. This spring is dug. The water is pumped to a tank holding 50,000 gallons, and the water often develops an unpleasant taste and smell like that of swamp water. There are three miles of mains in use, these being of cast iron, with rod iron and lead for the service pipes. About 80 families use this supply and an average of 60,000 gallons per day are used.

Versailles.—No public supply.

#### RUSH COUNTY.

Carthage.—No public supply.

Rushville.—In 1896 Rushville had built by Howe, of Indianapolis, deep tubular wells. The water from these wells is pumped to a reservoir holding 400,000 gallons and about 32 feet in diameter. This water is hard. Cast iron and galvanized iron compose the 14 miles of mains and service pipes. Four hundred families use this water, or 50 per cent., and the average daily consumption is 1,500,000 gallons.

#### SCOTT COUNTY.

Scottsburg.—No public supply. The wells are mostly bored through dark soil, subsoil clay, with strata of quicksand. A public supply will soon be built.

## SHELBY COUNTY.

Morristown.—No public supply. One well, 80 feet deep, supplies a good many of the inhabitants living in that section.

Shelbyville.—The Citizens Water & Light Co., built 21 years ago by Commeygs & Lewis, is owned by a private company. The supply is from driven wells from 56 to 75 feet deep in gravel. The supply is pumped direct to mains, 15 miles of which are used, these being cast iron. Three hundred families use this, or about 10 per cent. of the population. The average daily consumption is 1,500,000 gallons.

## SPENCER COUNTY.

Chrisney.—No public supply.

Dale.—No public supply.

Grand View.—No public supply.

Rockport.—A private company, called the Rockport Water Works Co., built in 1877 by A. H. Kennedy, and getting the supply from deep wells, furnishes this town with its public water supply. These wells are 90 feet deep through hardpan, about 20 feet from the surface, into gravel. The water is pumped to standpipe holding 60,000 gallons. This water is hard. Six miles of distributing mains are used, these being of cast iron with galvanized iron service pipes. Nearly all the population uses the supply and about 450 taps, consuming daily 250,000 gallons, are in use.

St. Meinrad.—In 1874 this town built a supply consisting of well and spring. The spring is piped into the well, going about 300 feet under ground. The land is all cleared on the watershed and about 200 inhabitants live thereon. The flow is from 500 to 1,000 gallons per day. The well is 15 feet deep, through rich ground subsoil, some clay, underlying strata mostly slate. The well is dug and the vein of water comes from what was formerly an old coal bank. The water is supplied by gravity from the spring to the well. The water tastes and smells of iron and sulphur. An iron pump is used and the pipe connecting the spring and well is of galvanized iron. On top and on the other side of the hill from the source of the water supply, about 200 feet distant, is a cemetery. There is a very small brook between the spring and the cemetery.

## ST. JOSEPH COUNTY.

**New Carlisle.**—Twenty-six years ago a system of driven wells were built for this town by G. Morgan, of Chicago. These wells are 118 feet deep, driven through gravel and with a capacity of 33,000 gallons per day. This water is pumped to a reservoir holding 33,000 gallons, and which is 16 feet deep and 20 feet in diameter. The supply is hard. Two miles of wooden mains, with galvanized iron service pipes, are used. One hundred families, or 99 per cent., use this water, and the 33,000 gallons are used in a day's time.

**Mishawaka.**—This town owns a public supply which takes its water from the St. Joseph River. This river receives sewage from above the intake of the supply and during the summer months there are many picnics held there. The water is forced into the mains at 40 pounds pressure. The mains are iron and iron and lead service pipes. This supply is not used for drinking purposes at all, that water coming from private wells.

**North Liberty.**—Two town wells and private wells supply this town.

**River Park.**—No public supply. Driven wells furnish the water.

**South Bend.**—In 1873 the city of South Bend had a system of artesian wells built for its public water supply. There are 63 of these wells with an average depth of 95 feet, and during 1905 these pumped 1,485,555,108 gallons. The wells go through sand and gravel. A standpipe holding 30,000 gallons, and direct pressure is used. Seventy-two and one-half miles of mains are used and these are of cast iron with lead to curb and galvanized iron from curb. Six thousand families use this supply, or 50 or 60 per cent. of the people, and 4,064,529 gallons daily are consumed. Many private wells are in use.

**Village.**—Driven wells owned by the different families and from 90 to 110 feet in depth furnish this supply.

**Walkerton.**—In 1897 this town had three driven wells built for its public supply. These wells are driven 40 feet and water comes to the surface and would flow. They are driven into gravel. This water is pumped to a standpipe with a capacity of 1,000 barrels, this being 80 feet on a derrick and is 20 feet deep and 16 feet

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF SOUTH BEND PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Solids.		Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.	Chlorine.	Total.	Fixed.	Hardness.	
179	Jan. 15, 1906	None.	0.0	None	V. s. earthy	.0004	.0014	.0000	.0007	1.000	36.7	29.5	11.2	Good.

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF ANGOLA PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Solids.		Iron.	B. coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.	Chlorine.	Total.	Fixed.	Hardness.	
81	Oct. 23, 1905	None	0.6	Mkd	Mch. red	.0074	.0034	.0000	.0000	1.6	47.3	38.2	.....	Good.
79	Oct. 23, 1905	None	.06	Mkd	Mch. red	.0082	.0034	.0100	.0000	1.6	47.5	40.2	.....	Good.



in diameter. The water is hard. There are three miles of distributing mains used, these being of cast iron. Three hundred families use the water, or 50 per cent. of the population, and 60,000 gallons are used daily.

#### STARKE COUNTY.

Hamlet.—No public supply. Private driven wells.

Knox.—No public supply.

North Judson.—Private driven wells furnish the water for this town.

#### STEUBEN COUNTY

Angola.—A private company, called the Angola Electric Light, Power & Water Co., which was built in 1892 by the Kinney, Croston & Pilliod Co., gets their supply from bored wells with an average depth of 100 feet. These wells are bored through sandy loam surface, clay and deep gravel. When the mains are not flushed often the water develops a musty smell and taste. Holly pumps are used. Seven and one-half miles of distributing mains are used, these being composed of iron with galvanized iron and lead service pipes. Four hundred and fifty families, or 20 per cent., use 300,000 gallons every 24 hours. Many private wells, driven from 35 to 100 feet deep, are used. When thoroughly flushed the water appears pure, but the mains are not flushed often enough and the water is often orange color and full of sediment.

Ashley.—No public supply.

Tremont.—No public supply. There is a driven town well about 90 feet deep which goes through gravel, subsoil clay, hardpan; underlying strata from which water is taken is gravel.

Hudson.—No public water supply.

#### SULLIVAN COUNTY.

Carlisle.—No public supply.

Farmersburg.—Private wells and cisterns furnish the supply for this town.

Shelburn.—No public supply.

Sullivan.—Sullivan now owns a public system, the supply of which is taken from a small creek. This was built by Howe & Co. eight years ago. This creek receives much water from several coal mines above the dam and is far from being a satisfactory supply. It is pumped to a standpipe 80x20 feet and from there flows through eight miles of mains having galvanized iron service pipes. About 450,000 gallons per day are used, but only for sprinkling and such purposes, the water for drinking and domestic purposes coming from private wells. The town is now figuring on sinking wells. The water is very hard and smells and tastes of sulphur.

#### SWITZERLAND COUNTY.

Vevay.—This town owns and operates a water supply which was built in 1895 by Guild & White, of Chattanooga, Tenn., and which gets its water from the Ohio River. This water is pumped to a reservoir 16 feet deep and holding 1,500,000 gallons. In summer it develops a somewhat stagnant odor and taste. The water is soft, and four miles of distributing mains are used, these being of cast iron dipped, with galvanized iron service pipes. Sixty-two per cent, or about 200 families, use this water for fire, sprinkling, and other purposes, but it is not used at all for drinking, as this water comes from private wells.

#### TIPPECANOE COUNTY.

Clarks Hill.—No public supply.

Lafayette.—In 1875-76 the city of Lafayette built a public water supply consisting of driven wells 35 feet deep, and 5,000,000 gallons can be pumped in 24 hours. The supply is pumped to a reservoir 28 feet deep and with a capacity of 4,200,000 gallons. The water is hard and 50 miles of cast iron distributing mains are in use, extra strong  $\frac{5}{8}$ -inch lead being used for service pipes. The average daily consumption of water is 2,500,000 gallons, and 5,000 families, or 25 per cent. of the population, use this supply. Many private wells are also used.

West Lafayette.—A private company called the West Lafayette Water Works Co., and built in 1893, furnishes this town with its supply, which is taken from driven wells 70 feet deep. A reser-

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF CLARK'S HILL PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.			
699	October 23, 1906	None	0.0	V. s.	V. s.	.0000	.0020	.0000	.0000	1.2	42.9	37.1	31.7	Tr'ce	Good.

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF LIBERTY PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Iron	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.			
65	Oct. 11, 1905	Decided earthy	0.0	None	None	.0022	.0164	.3000	.00032	1.30	.....	.....	.00	...	Bad.
77	Oct. 23, 1905	Decided musty	.3	Slight	Slight	.0033	.0144	.2000	.0010	1.00	36.0	21.5	Tr'ce	...	Good.
334	May 12, 1906	S. earthy	5	V. s.	S. earthy	.0000	.3200	.2300	.0008	19.6	159.8	93.7	14 Tr'ce	...	Doubtful

voir is used which is 50 feet high and about 35 feet in diameter, the water being supplied from this by gravity. Cast iron mains are used and galvanized service pipes. About 500 families use the supply. Private wells are used also.

#### TIPTON COUNTY.

Tipton.—The city of Tipton built a system of driven wells in 1892, these wells being from 300 to 600 feet deep, the water coming from limestone. This water is pumped into two 20,000 barrel cisterns. The supply flows through 10 miles of cast iron mains, lead and galvanized iron being used for service pipes. About 700 families, or 75 per cent. of the population, use this water. The water is good.

Windfall.—No public supply.

#### UNION COUNTY.

Liberty.—In 1894 the town of Liberty built a supply, the source of the supply being five springs. These springs are walled in with cement at the surface and piped into a reservoir through a 4-inch galvanized iron pipe. Natural pressure is used. The reservoir is 80x75 feet and 14 feet deep in center. In the latter part of the summer a mossy taste and odor develops. The water is hard. Five miles of mains are used of galvanized iron, iron and lead pipe being used for service pipes. There are about 250 families using this water.

#### VANDEBURGH COUNTY.

Evansville.—In 1900 Evansville completed new water works with Holly pumps. The supply is taken from the Ohio River, and is pumped direct from intake into the mains. This supply is soft water. Eighty miles of distributing mains of cast iron, with wrought iron galvanized for service pipes, are used. Four thousand families, or 50 per cent., use the supply, 9,000,000 gallons daily being used.

**CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF EVANSVILLE PUBLIC SUPPLY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.		Solids.		Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.			Total.	Fixed.			
282†	April 5, 1906	Earthy	0.0	V. marked	V. marked	.0084	.0250	.0010	.0010	.3	.3	28.5	25.0	Tr'ce	+	.....
283	April 5, 1906	None	5—	Slight	Much reddish	.0014	.0220	.0050	.0003	2.8	2.8	59.2	50.0	.06	.....	.....

† Not same as 282.

**CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELL AT LIVONIA.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.		Solids.		Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.			Total.	Fixed.			
428	July 24, 1906	None	0.0	V. s.	S. reddish	.0004	.0020	.0000	.0000	8.00	8.00	35.00	24.3	.04	*	Bad.

\* Gas former present.

## VERMILLION COUNTY.

Cayuga.—No public supply.

Dana.—A system of driven and dug wells for use in case of fire and for sprinkling purposes, together with private driven wells is the supply for this town.

Newport.—No public supply.

## VIGO COUNTY.

Terre Haute.—A private company called the Terre Haute Water Works Co., and owned by them since 1873, gets its supply from the Wabash River. All sewers discharge below the intake. The water is pumped through filters direct. In the winter the water developed an especially bad woody taste, which is due to plant life in the water. Sixty miles of mains are used, these being of cast iron with a little wrought iron, and lead and galvanized iron service pipes. Probably 40 per cent. of the population use the public supply and 60 per cent. are supplied by private wells.

## WABASH COUNTY.

North Manchester.—This town owns a system of flowing wells which was built in 1894. These wells are driven 100 feet deep and are 14 in number, flowing about 55,000 gallons in seven hours. These are driven through clay top soil, gravel and sand below, and the water is pumped to a standpipe 16 feet by 110 feet high, holding approximately 162,000 gallons. The supply is hard. About five miles of distributing mains of iron, with galvanized iron service pipes, are used. Two hundred families, or 25 per cent., use daily 70,000 gallons.

Roann.—No public water supply.

Wabash.—Wabash is supplied with its water by the Wabash Water Co., a private company built in 1886 by Samuel Bullock & Co. The water comes from bored wells 60 feet deep, bored through a layer of very hard blue clay, then into gravel. This is pumped to a standpipe 100 feet high and 25 feet in diameter and covered. The water is medium hard. Twenty-six miles of mains of cast iron, with service pipes of the same, are in use. Fifteen hundred, or 75 per cent. of the families, use about 750,000 gallons per day. There are some private wells on the south, but not on the north side of the city.

## WARREN COUNTY.

West Lebanon.—No public water supply.

## WARRICK COUNTY.

Boonville.—This city owns an artificial lake 6 to 13 feet in depth, which was built in 1896. The watershed consists of 200 acres with three houses thereon. A standpipe is used and the water is pumped to it. This standpipe is 100 feet high and is 20x30 feet. The water from this supply is soft. Iron on steel is used for the nine miles of distributing mains, and 350 families use the water. There are also many private wells in use.

## WASHINGTON COUNTY.

Campbellsburg.—No public supply.

Hardinsburg.—No public water supply.

Livonia.—Private bored wells furnish the supply for this town.

New Pekin.—No public supply.

Salem.—This town has a system of springs which they had built in 1884, and which is owned by Salem. The watershed is 1,000 acres, wooded and cleared and with about 75 inhabitants thereon. The flow from these springs averages 125,000 gallons. The water is hard and the soil is clay, limestone subsoil. A reservoir with a capacity of 60,000 gallons is used. At times the water develops a taste of mud and rotten leaves. After hard rains the water becomes muddy, but this will be remedied soon by improvements. About five miles of mains of iron are used, with gas pipe for service pipes. Four hundred families, or 66 2-3 per cent. of the population, use the supply, and the average daily consumption is 80,000 gallons. A few private wells are used.

## WAYNE COUNTY.

Boston.—No public supply.

Cambridge City.—The only public supply Cambridge City has is for sprinkling and fire protection. The taste and appearance of well water used is good, but the nearness of many of the wells to privy vaults is not assuring that in the future the water may not be contaminated.

Centerville.—No public water supply.

**CHEMICAL ANALYSIS OF PUBLIC WELL AT CAMBRIDGE CITY.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
130	November 22, 1906.....	None .....	0.0	None .....	None .....	Tr'ce	Tr'ce	.2000	.0003	1.2	38.7	30.4	14.0	0.00	....	Good.

**CHEMICAL ANALYSIS OF WATER FROM PUBLIC WELL AT HAGERSTOWN.**

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	B. Coll.	Remarks
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.				
245	March 30, 1906.....	None.....	0.0	None.....	None.....	.0010	.0060	.2000	.0002	59.4	182.5	163.0	22.5	.00	....	Bad.



Dublin.—Private wells furnish the supply for this town.

Hagerstown.—Private wells from 18 to 105 feet deep furnish the water supply for Hagerstown.

Milton.—No public supply.

Richmond.—The Richmond Water Works Co., a private concern, built in 1884 by S. I. Wiley Construction Co., gets its supply from a well 25 feet deep, drawing 500,000 gallons, with a capacity of 1,000,000 gallons per day, and from a system of gallery wells. This water is piped to a reservoir having a capacity of 8,000,000 gallons. The watershed area is about eight square miles with 12 families living thereon. The water at times has a fishy smell and tastes of old wood. The water is hard. Thirty-eight miles of mains are used, these being of cast iron with lead service pipes. Two thousand families or about 66 2-3 per cent. of the population, use the supply, which consists of about 2,000,000 gallons per day.

Whitewater.—There are two public wells in this town, about 20 feet deep into clay.

#### WELLS COUNTY.

Bluffton.—In 1884 Bluffton had built a system of driven wells about 500 feet deep. The water is pumped by compressed air into a well 30x60 feet and 30 feet deep, cemented and cleaned annually with the fire hose. The water is hard, and 4.5 miles of distributing mains are used of cast iron having lead pipe  $\frac{3}{4}$ -inch in diameter and weighing  $2\frac{1}{2}$  pounds. Four hundred and eighty taps, with some others in flats, supply 60 per cent. of the population with 350,000 gallons per day.

Liberty Center.—Private drilled wells from 60 to 160 feet deep supply this town.

Ossian.—No public supply.

Poneto.—No public supply.

#### WHITE COUNTY.

Brookston.—No public supply.

Monticello.—In 1895 the town of Monticello built a dug well 20 feet deep, having 14 feet of water. The soil is gravel. This well has a brick wall. The water is pumped to a standpipe with a capacity of 126,000 gallons. The water is medium hard. A

CHEMICAL ANALYSIS OF WATER FROM SYSTEM OF RICHMOND PUBLIC SUPPLY.  
Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Solids.		Iron.	B. Coll.	Remarks.
						Free.	Albuminoid.	Nitrates.	Nitrites.	Total.	Fixed.			
458	August 8, 1906.	None	0.0	None	V. slight	.0010	.0098	.3500	.0003	38.7	28.4	.0000	*	.....
466	August 8, 1906.	Sl. foul.	0.0	None	V. sl. earthy.	.0000	.0028	.2000	.0003	40.0	32.5	.0500	†	.....
469	August 11, 1906.	Sl. earthy	0.0	None	V. slight	.0060	.0078	.1920	.0050	32.1	23.5	.0000	†	.....
488	August 16, 1906.	None	0.0	None	V. slight	.0010	.0046	.1500	.0001	37.2	29.1	30.2 Tr'ce	*	.....
490	August 16, 1906.	None	2.0	None	Sl. veg.	.0000	.0048	.1500	.0000	39.1	29.4	25.7 Tr'ce	*	.....
497	August 22, 1906.	Dec. musty.	0.0	None	None	.0020	.0158	.1200	.0016	38.5	25.0	20.2 Tr'ce	*	.....
498	August 22, 1906.	None	0.0	None	None	.0000	.0028	.1000	.0000	47.1	32.8	30.7 Tr'ce	*	.....
499	August 22, 1906.	Dec. musty.	0.0	Slight	V. slight	.0014	.0076	.1000	.0015	37.2	25.0	.0100	.....	.....
536	August 28, 1906.	None	0.0	None	None	.0054	.0040	.0650	.0000	42.6	34.6	.0200	.....	.....
537	August 28, 1906.	None	0.0	None	None	.0036	.0142	.0500	.0015	38.2	22.5	Tr'ce	†	.....
538	August 28, 1906.	None	0.0	None	None	.0014	.0046	.1500	.0000	37.3	26.6	24.2 Tr'ce	.....	.....
539	August 28, 1906.	None	0.0	None	None	.0048	.0132	.0700	.0015	30.4	22.8	.0000	.....	.....
540	August 28, 1906.	None	0.0	None	None	.0014	.0040	.1000	.0000	35.6	27.2	.0050	.....	.....
541	August 28, 1906.	None	0.0	None	None	.0010	.0074	.0700	.0003	32.7	25.0	.0000	.....	.....
613	September 27, 1906.	None	0.0	None	None	.0000	.0050	.1000	.0003	35.0	27.3	.0200	†	.....
614	September 27, 1906.	None	0.0	None	V. slight	.0000	.0044	.1000	.0003	35.0	27.0	.0150	.....	.....

† Acid gas formers present. \* Gas formers present.

little more than five miles of distributing mains are used, these being of iron. Three hundred families, or 40 per cent., use this supply, and 200,000 gallons per day are consumed. The well is 60 feet below the level of the town, being in the river bottom. The well is 12 feet in diameter and until the last year flowed from outlet five or six feet below surface when not pumped.

Monon.—No public supply.

Wolcott.—No public supply.

#### WHITLEY COUNTY.

Churubusco.—In 1898 this town had a well bored 385 feet deep, over 100 feet being in rock, by the Seckner Water & Light Co. The water is pumped to a standpipe 100 feet high, 10 feet in diameter and holding 2,000 barrels. At times the water develops an unpleasant taste of dead water, but this is usually when the pipes have not been flushed. Two miles of mains of cast iron distribute the water to the 200 families using it. About 100 per cent. use the supply and 30,000 gallons per day in summer are consumed. A new well is being put in by Miss Josia Kingdom, but the water has not as yet been turned into the mains.

Columbia City.—This city built a system of drilled wells in 1894, these wells being from 200 to 800 feet deep, drilled in rock. The water is pumped to a standpipe by direct pressure. The water is soft and at times tastes of iron. Twelve miles of distributing mains of iron, with lead service pipes, are used in carrying the 400,000 gallons which are used daily by 75 per cent. of the people. About 15 private wells are in use.

South Whitley.—This town built four bored wells in 1896, with an average depth of 50 feet. The water is pumped by direct pressure. The water is hard and at the end of the pipe line has a dead taste, or stagnant. Iron is used for the 2 3-5 miles of mains and lead is used for the service pipes. About 40 families, or 25 per cent., use this supply, and 90,000 gallons per day are consumed,

## CHEMICAL ANALYSIS OF WATER FROM MONTICELLO PUBLIC SUPPLY.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	Remarks.
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.			
102	Nov. 3, 1905	None	20	Marked	Consid. flocc.	.....	.....	.0100	.0003	.30	34.5	29.2	.....	.....	Good.
123	Nov. 22, 1905	None	10—	Marked	V. s	.0230	.0050	.0000	.0006	.40	33.5	28.0	16.2	.03	Good.
509	Aug. 25, 1906	None	5.0	Marked	Consid.	.0250	.0042	.0000	.0220	1.00	37.5	29.2	29.9	.35	Doubtful.

## CHEMICAL ANALYSIS OF WATER FROM PUBLIC SUPPLY OF COLUMBIA CITY.

Parts in 100,000.

Laboratory Number.	Date of Analysis.	Odor.	Color.	Turbidity.	Sediment.	Ammonia.		Nitrogen as		Chlorine.	Solids.		Hardness.	Iron.	Remarks.
						Free.	Albuminoid.	Nitrates.	Nitrites.		Total.	Fixed.			
518	Aug. 25, 1906	None	0.0	Slight	V. s	.0214	.0034	.0000	.0000	1.00	40.5	32.3	29.9	.15	Good.

## THE INSPECTION AND CONTROL OF FOOD AND DRUGS:

In the absence of national legislation on the subject it has remained for the several States to solve the problem of pure food as best they might. Inability of the individual State to interfere with interstate commerce has been one of the chief drawbacks to the framing of an entirely satisfactory pure food law. A State can, provided the means are afforded it, regulate the manufacture and sale of all home products. But when all other States are allowing the manufacture of impure goods it becomes an impossibility for any one State to keep such goods from coming over its borders. Notwithstanding this vital defect in the working of any local pure food law, every State has some form of a food law on its statute books.

Pure food laws are a part of the police power of the State, and as such are subject to the broadest interpretation. The extent to which a State may go to protect public health and prevent fraud is indefinable and unlimited. The laws are justified by the unquestioned fundamental right of the State to provide for the protection and preservation of health. Even before the enactment of special food laws, it was an indictable offense to mix anything in the food made and supplied for human consumption which would be unwholesome and deleterious to health, and the wilful adulteration or mixing unwholesome ingredients in foods was considered an act dangerous to the public health and to life, and constituted a public nuisance.

The State food laws were first intended to prohibit the sale of foods injurious to health. The statutes were strictly drawn for this purpose and the courts have in all instances upheld them. This class of adulteration has been so rigidly restricted that its extent is much less than formerly, except in the case of the use of antiseptics and coloring materials. The contention is made that the use of the extremely small quantities of antiseptics necessary to prevent fermentation and decay in no way imperils the life or health of the consumer. But the courts frequently have held that "It is not the quantity but the nature of the substance which the act prohibits."

By far the greater part of the adulteration of food is not an

attack upon the health of the consumer, but an economic fraud, and consists in forcing upon him without his knowledge products different from what they purport to be, lacking in valuable constituents or made from cheap ingredients so prepared as to counterfeit the genuine article. It is to the suppression of adulterations of this class that most recent legislation has been directed.

The food law under the provisions of which the laboratory is operated dates back only as far as 1899. Earlier than this there had been some food legislation, chiefly of a specific character, but lack of enforcement rendered it of little value. In 1883 the oleomargarine bill was enacted, making it obligatory upon dealers in oleo to label their product. The General Assembly in 1905 re-enacted all food laws passed by earlier legislatures, making such changes therein as were suggested by a committee appointed to revise the code. The present food law of the State was given in full in the annual report of the State Board of Health for 1905, together with the food standards and definitions adopted July 7, 1905, by the State Board of Health. These rulings furnish a definite basis for work in the enforcement of the pure food law. The definitions and standards adopted are those established as official for the United States Government or given in the latest edition of the Pharmacopoeia. The analytical methods employed are the official methods approved and adopted by the Association of Official Agricultural Chemists.

In the absence of any definite information as to the character of the foods and drugs sold in the State, before a proper enforcement of the law could be undertaken, it was necessary to learn of conditions that needed a remedy. In order to get this information, and to be fully advised as to the conditions of the markets throughout the State, the first step taken towards law enforcement was to send out inspectors to every section, for the purpose of taking samples of foods and drugs for analysis, and to spread among manufacturers, wholesalers and retailers of those products, information as to the character of the law, its provisions and intentions. Proper observance of food and drug laws, which are technical in character and the meaning of which is not easily interpreted, can only follow a clear understanding of the law. The inspectors have given much attention to this phase of the work, which is educational rather than corrective, and their results con-

firm the idea that law violation is more often the result of ignorance and unskilful preparation, than of wilful misrepresentation and fraud. During the year, L. W. Bristol, Bert W. Cohn, Chas. Bragg, Wm. McAbee and R. E. Bishop have acted as food and drug inspectors, and have visited nearly all the larger cities and towns of the State at least twice, and in some cases three times. The cities so inspected were Indianapolis, Anderson, Muncie, Ft. Wayne, South Bend, Elkhart, Goshen, Hammond, Michigan City, Whiting, Peru, Marion, Alexandria, Elwood, Noblesville, Lafayette, Crawfordsville, Brazil, Greencastle, Terre Haute, Vincennes, Evansville, New Albany, Madison, Jeffersonville, Washington, Franklin, Edinburg, Martinsville, Bloomington, Richmond, Connersville, Columbus, Covington, Attica, Williamsport, Veedersburg, Hillsboro, Kokomo, Huntington, Huntingburg, Boonville, Salem, Mt. Vernon, Delphi, Logansport, Auburn, Tipton, Plymouth, Rushville, Oakland City, Princeton, Wabash, Laporte, Albion, Valparaiso and Rochester. In addition to the collection of samples for analysis the inspectors made note of the character of the stores and markets visited, and have reported all unclean, filthy or unsanitary places, visited slaughter-houses, and examined into local health conditions.

The results of these investigations are described under the title, "Condition of Groceries, Markets and Slaughter-Houses."

In addition to the regular inspectors who have been engaged entirely in work outside the laboratory, the chemical force has also made frequent inspection trips for the purpose of purchasing samples and investigating unsatisfactory conditions. The cost of inspectors' traveling and hotel expenses and the purchase of samples has been \$1,584.20. The number of samples brought in and analyzed was 5,200; the cost per sample was, therefore, 30.46 cents, a figure which is very low in view of the fact that at least a part of each inspector's time was occupied in other than food and drug work.

Much work has also been done at the laboratory for the purpose of informing wholesalers and manufacturers as to the character of the products they were handling. These samples have been sent to the Laboratory accompanied by proper information as to their source. The results of the analyses which have been furnished the dealers have been heartily appreciated by them, and

have contributed largely in assisting them to remove their stock of adulterated goods and as well have assured them that the quality of new invoices was satisfactory. Manufacturers and wholesalers all over the State have taken advantage of the opportunity the Laboratory has afforded for this work, and have not failed to express their appreciation of the assistance they have received. The Laboratory was opened for work about the 1st of September, 1905, and in this report is enumerated all the work done since that time up to the end of the fiscal year, covering a period of about 14 months. During that time there have been analyzed 3,641 samples of food products, and 1,559 samples of drugs. Of the total number of food products examined 57.7 per cent. have been pure, while of the drug samples 37.5 per cent. have been pure.

The expense of maintaining the Food and Drug Laboratory from September 1, 1905, the time when work was commenced, to October 31, 1906, including salaries of chemists, clerk and janitor, laundry bills, sundry drug bills, apparatus to replace breakage during the year, postage, etc., was \$4,588.43. The total number of food and drug samples analyzed was 5,200, thus making the cost per sample 88.24 cents. The total cost per sample for collection and analysis was \$1.187. Included in this estimate are many expenses that were not actually incurred in the food and drug work. For instance, much of the office work consists in answering queries and sending out information concerning the food and drug laws, and much of the time of the chemist is occupied in executive rather than in analytical and inspection work.

The following summary gives in detail the character and variety of the work done and the analytical results:

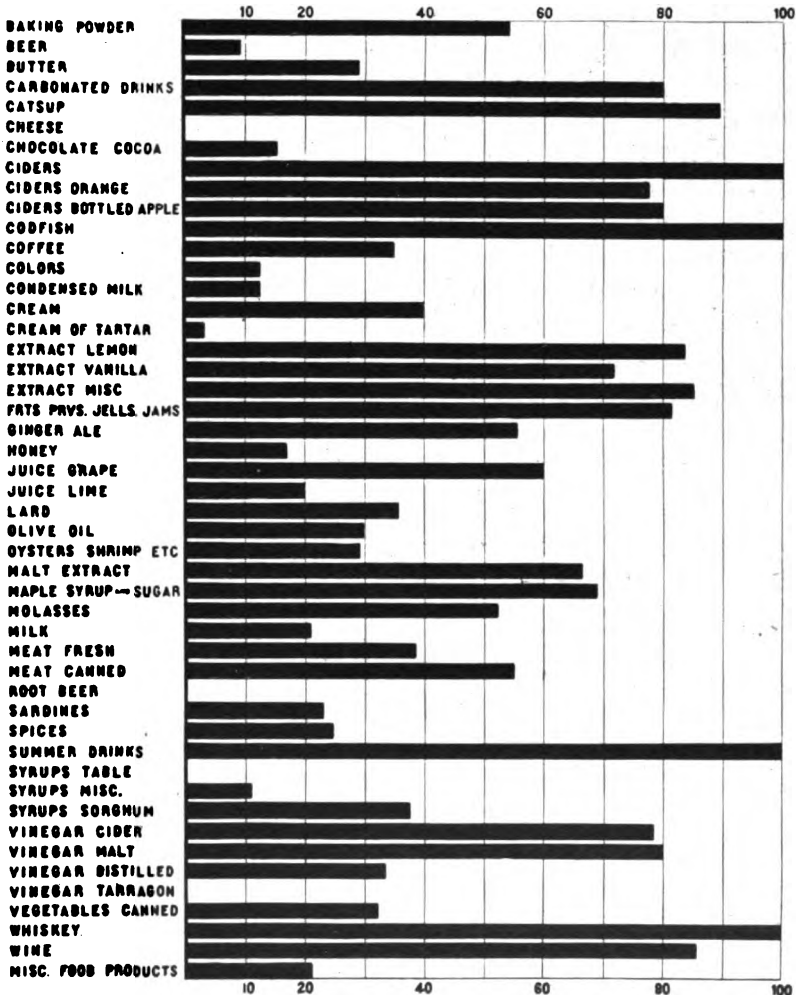


## RESULTS OF ANALYSES OF FOOD SAMPLES.

Articles Examined.	Good.	Bad.	Total.	Per Cent. of Adul- teration.
Baking powder.....	22	26	48	54.1
Beer.....	70	7	77	9.1
Butter.....	37	11	38	28.9
Carbonated drinks.....	4	16	20	80.0
Catsup.....	8	67	75	89.3
Cheese.....	5	0	5	0.0
Chocolate and cocoa.....	44	8	52	15.3
Ciders.....	0	6	6	100.0
Ciders, orange.....	2	7	9	77.7
Ciders, bottled apple.....	1	4	5	80.0
Codfish.....	0	4	4	100.0
Coffee.....	15	8	23	34.8
Colors.....	7	1	8	12.5
Condensed milk.....	7	1	8	12.5
Cream.....	29	19	48	39.6
Cream of tartar.....	248	8	256	3.1
Extract lemon.....	56	287	343	83.7
Extract vanilla.....	53	136	189	71.9
Extract, miscellaneous.....	5	29	34	85.3
Fruit in tin.....	13	0	13	0.0
Fruit preserves, jellies and jams, in glass.....	22	97	119	81.5
Ginger ales.....	4	6	10	55.5
Honey.....	29	6	35	17.1
Juice, grape.....	2	3	5	60.0
Juice, lime.....	4	1	5	20.0
Lard.....	27	15	42	35.6
Olive oil.....	132	56	188	29.8
Oysters, shrimps, etc.....	23	9	31	29.0
Malt extract.....	1	2	3	66.6
Maple syrup and sugar.....	36	79	115	68.7
Molasses.....	10	11	21	52.3
Milk.....	368	98	461	20.1
Meat, fresh.....	141	88	229	38.4
Meat, canned.....	9	11	20	55.0
Root beer.....	4	0	4	0.0
Sardines.....	10	8	18	23.0
Spices.....	446	147	593	24.7
Summer drinks, miscellaneous.....	0	4	4	100.0
Syrups, table.....	3	0	3	0.0
Syrups, miscellaneous.....	16	2	18	11.1
Syrups, sorghum.....	10	6	16	37.5
Vinegar, cider.....	52	187	239	78.2
Vinegar, malt.....	4	2	6	33.3
Vinegar, distilled.....	4	2	6	33.3
Vinegar, tarragon.....	1	0	1	0.0
Vegetables, canned.....	40	19	59	31.2
Whisky.....	0	2	2	100.0
Wine.....	3	18	21	85.1
Miscellaneous food products.....	63	17	80	21.2
Total.....	2,098	1,543	3,641	42.3

# PERCENTAGE OF ADULTERATION OF FOOD PRODUCTS IN INDIANA

YEAR ENDING OCTOBER 31, 1906.



It has been the custom of the Laboratory to publish from time to time in the Monthly Bulletin of the State Board of Health summaries of the work, giving names of dealers and manufacturers of products both good and adulterated. The press of the State has also given wide publicity to the results of the Laboratory in frequent popular articles, and as well by occasionally reporting in full the results, has contributed largely to a better understanding of what the Food and Drug Law is, and of the conditions of the markets which make its enforcement necessary. The Bulletin has also been distributed widely among manufacturers, wholesalers, retailers and the public, and has served to convey much information as to the character of the food and drugs sold. The health officers of many cities and towns have acted as food and drug inspectors and have devoted much attention to the quality of the goods sold in their cities. The cities of Indianapolis, South Bend, Ft. Wayne, Crawfordsville, Terre Haute, Evansville, Noblesville, Newcastle and Columbus have done valuable work, particularly in controlling the quality of their milk supply. It is, of course, very desirable that every city have its own milk inspector and a properly equipped laboratory where the necessary analytical work may be done. In the absence of such facilities, however, the State Laboratory endeavors to assist local authorities, and has furnished material help in many instances.

#### MILK.

During the fall of 1905 our inspectors visited most of the larger cities and towns and collected samples of milk which were shipped to the Laboratory for analysis. The quality of the milk supplies thus investigated was found to be good. In only a few instances did it appear that preservatives or coloring matter had been used. The results of the examination show that of the 461 samples analyzed 368 were pure and 93 were adulterated. These figures do not express the true character of the milk, however, so far as wilful violation of the law is concerned, for most of the milks reported as adulterated were so classed because they contained a slightly lower fat content than that required by law, and not because they bore evidence of having been skimmed or watered. The control of the purity of a milk supply by Laboratory methods is satisfactory in so far as it insures the sale of milk of

## MILK ANALYSES BY CITIES AND TOWNS.

Locality.	No. Above Stand- ard.	No. Below Stand- ard.	Total No. Samples Col- lected.	Per Cent. Below Stand- ard.	Per Cent. Total Solids in Lowest Sample.	Per Cent. Fat in Lowest Sample.
Alexandria.....	6	0	6	0	—	—
Anderson.....	8	1	9	11.1	—	3.0
Bourbon.....	1	0	1	0	—	—
Brazil.....	5	1	6	16.6	—	3.1
Broad Ripple.....	1	0	1	0	—	—
Bridgeport.....	0	1	1	100.0	—	2.4
Cartersburg.....	1	0	1	0	—	—
Carmel.....	2	0	2	0	—	—
Columbus.....	6	5	11	45.4	—	3.0
Crawfordsville.....	1	1	2	50.0	11.23	1.9
Elkhart.....	8	4	12	33.3	9.79	1.7
Elwood.....	5	1	6	16.6	—	2.0
Evansville.....	19	5	24	20.8	6.75	1.55
Fowler.....	0	1	1	100.0	10.40	2.00
Franklin.....	2	0	2	0	—	—
Ft. Wayne.....	8	6	14	42.5	10.21	2.4
Greencastle.....	3	0	3	0	—	—
Greenfield.....	2	0	2	0	—	—
Hagerstown.....	1	0	1	0	—	—
Hammond.....	6	6	12	50.0	—	3.0
Huntington.....	7	1	8	12.5	—	3.1
Indianapolis.....	12	7	19	37.0	10.70	1.35
Jeffersonville.....	13	6	19	31.5	6.79	1.4
Kokomo.....	17	2	19	10.5	11.70	2.6
Lafayette.....	13	1	14	7.1	10.83	1.3
Lebanon.....	5	1	6	16.3	—	3.2
Marion.....	13	2	15	13.3	11.78	2.8
Michigan City.....	15	0	15	0	—	—
Martinsville.....	4	1	5	20.0	—	—
Mt. Vernon.....	4	0	4	0	—	—
Muncie.....	11	3	14	21.3	11.21	2.3
Noblesville.....	6	2	8	25.0	11.66	2.4
Napoleon.....	1	0	1	0	—	—
New Albany.....	16	3	19	21.0	10.28	1.6
New Castle.....	5	2	7	28.5	10.51	1.1
Oakland City.....	4	1	5	20.0	—	3.02
Petersburg.....	7	1	8	12.5	—	2.0
Rockville.....	1	0	1	0	—	—
Russiaville.....	1	0	1	0	—	—
South Bend.....	77	15	92	16.3	10.06	1.5
Terre Haute.....	45	11	56	19.6	9.46	1.4
Vincennes.....	2	1	3	33.3	12.27	3.0
Washington.....	4	1	5	20.0	—	3.0
Forty-two towns.....	368	93	461	20.1	—	—

standard composition, free from added water, color and preservatives. But it does not guard against unsanitary conditions of production and handling that are of far more importance to the public health than the frauds practiced by unscrupulous dealers. The healthfulness of the cows, well kept dairies, and suitable appliances for cooling and marketing milk before it becomes the host of myriads of abnormal bacteria, are factors which can not be neglected if a city's milk supply is to be kept clean and wholesome. It is obvious that State inspection of dairies can not well be undertaken. The State can not keep a host of inspectors to cover 36,000 square miles nor control the conditions of thousands of dairies. Such work should be the duty of sanitary officers ap-

pointed for the purpose by each city. Several cities of the State have already undertaken such inspection and report that at the beginning of the work but few dairies were found that were properly arranged and handled. Indianapolis is requiring of its milk dealers the observance of scrupulous cleanliness about the barn and milkhouse, and milk inspectors make frequent inspections to see that the regulations are lived up to by the producers. New Albany has recently adopted a comprehensive milk inspection ordinance that may well be adopted by other cities. It differs from the usual ordinance in that no license fee is charged the dairyman for his permit to sell his produce. Instead he pays a veterinarian for inspecting his herd at least four times a year. This the dairyman is usually willing to do, for such inspection is now a part of the routine of successful dairying.

#### CREAM.

Of the 48 samples of cream examined, 19, or 39.5 per cent., were classed as adulterated. The standard fat content of cream is 18 per cent., and it is apparent from the results obtained that many dealers put out cream containing much less than that. One sample examined contained only 4 per cent. of fat and was in truth nothing more than a rich milk. We have found no evidence of cream thickeners, gelatine compounds, etc., having been used.

#### BUTTER.

Of the samples of butter analyzed 27 have been good and 11 adulterated. The condition of the butter market is worthy of serious attention. A single inspection of the city market of Indianapolis showed that of nine samples of so called "dairy butter" purchased, six were oleomargarine. Several of the samples so sold were wrapped in brown paper which when taken from the butter was found to bear the stamp "oleomargarine." It is evident that the dealers using such a stamp were doing it only for the purpose of complying with the regulations of the Internal Revenue Department, rather than to give any information as to the article purchased. The stamp was nearly illegible and so placed as to be entirely hidden from the purchaser. The addition of the word "oleomargarine" in such a fashion does not, however, comply

with the Government regulations. The regulations for the sale of oleomargarine by retail dealers as laid down by the Internal Revenue Department are as follows:

"Each retailer's wooden or paper package must have the name and address of the dealer printed or branded thereon, likewise the words 'pound' and 'oleomargarine' in letters not less than one-quarter of an inch square, and the quantity written, printed or branded thereon in figures of the same size (one-quarter of an inch square), substantially as follows:

1 .....

2 .....

3 .....

[ $\frac{1}{2}$ ] pound

Oleomargarine.

(Letters  $\frac{1}{4}$ -in. sq.)

1. Here give dealer's name.

2. Here give street number.

3. Here give name of city or town."

"The words 'oleomargarine' and 'pound,' which are required to be printed or branded on retailer's wooden or paper package, in letters not less than one-quarter of an inch square, and the quantity which is required to be written, printed, or branded thereon in figures of like size, must be so placed as to be plainly visible to the purchaser at the time of delivery to him. Illegible or concealed marks and brands are not those contemplated and required by the law and regulations. It will not be deemed a compliance with this regulation if the word 'oleomargarine' and the other required words and figures shall be illegibly branded or printed or so placed as to be concealed from view, by being on the inside of the package, or by folding in the stamped portion of the paper sheet used for wrapping or otherwise. The required words and figures must be legibly printed or branded and conspicuously placed, and no other word or business card should be placed in such juxtaposition thereto as to divert attention from the fact that the contents of the package are wholly oleomargarine.

"The foregoing regulations relative to the marking or branding of retail packages apply equally to sales of colored and uncolored oleomargarine.

"The color of the ink with which the words are printed must be in the strongest contrast to the color of the package."

We have never yet purchased oleomargarine as such or under

the disguised name of "dairy butter" that was properly marked. The dealers stoutly maintain their rights to sell oleomargarine under fancy names. They insist that it is called "dairy butter" by the trade; that, in fact, long continued usage authorizes the sale of oleomargarine when dairy butter is called for. The phrases "Country Roll," "Jersey Roll," etc., are also applied to oleomargarine. Of course, such misleading terms are used only to deceive the customer and promote the sale of oleomargarine. There is no contention nowadays that oleomargarine is not as wholesome as butter; the illegality of its sale consists in the fact that the retailer purchasing it for 15 cents a pound or less, is able by selling it as butter to make an enormous profit.

Within recent years a very large business has been built up in the manufacture and sale of so-called renovated butter. Renovated butter is made from butters that are unsalable because of their appearance, odor, rancidity and general unfitness for consumption. Renovated butter stock is collected throughout the country much as soap grease is collected. It is hauled to some central depot and there melted, strained, treated with acids or alkali or blown with steam until it is deodorized and its rancidity is removed. The butter is then re churned, usually with milk, and worked up into salable form. The better grades of renovated butter are of fine appearance and of good quality, and large amounts of renovated butter are manufactured yearly, and yet after frequent inquiry of dealers in butter we fail to find that the renovated article is ever sold. It undoubtedly comes to market as creamery butter, and the extent of the imposition practiced by butter dealers or house to house vendors must be very great.

## BUTTER—LEGAL.

Laboratory Number.	Brand.	Retailer.	Where Collected.	Butyro-Reading.
1801.....			Indianapolis.....	
3812.....			Indianapolis.....	
3814.....			Indianapolis.....	
3942.....			Princeton.....	42.0
5706.....	Creamery..	Star Grocery.....	Elwood.....	41.2
5898.....		Zoeller-Mertz.....	Ft. Wayne.....	44.2
5918.....		Amos R. Walton.....	Ft. Wayne.....	44.0
6040.....		E. C. Murphy.....	Goshen.....	43.9
6128.....		Joe Vinall.....	Plymouth.....	44.0
6615.....	Dairy.....	Kissell.....	Market House, Indianapolis..	44.0
6616.....	Dairy.....	Barrick.....	Market House, Indianapolis..	43.8
6620.....	Dairy.....	Brinkerman.....	Market House, Indianapolis..	44.2
4682.....	Dairy.....		Indianapolis.....	42.8

## BUTTER—ILLEGAL.

Laboratory Number.	Brand.	Retailer.	Where Collected.	Butyro-Reading.	Halpen Test.	
1385.....			Indianapolis.....			Oleomargarine.
3668.....	Butter.....	Court House Grocery.....	Indianapolis.....	49.9	Light...	Oleomargarine.
3734.....	Creamery.....	Court House Grocery.....	Indianapolis.....	49.6	Light...	Oleomargarine.
3813.....	Creamery.....	Court House Grocery.....	Indianapolis.....			Oleomargarine.
6412.....	Dairy.....	Elliker.....	Market House.....	51.2		Oleomargarine.
6613.....	Dairy.....	M. J. Carlisle.....	Market House.....	51.9		Oleomargarine.
6614.....	Dairy.....	Lewellen.....	Market House.....	50.7		Adulterated.
6618.....	Dairy.....	Kimberlin.....	Market House.....	51.1		Adulterated.
6619.....	Dairy.....	Williamson.....	Market House.....	50.3		Oleomargarine.
6617.....	Dairy.....	M. B. Groff.....	Market House.....	50.0		Oleomargarine.
4150.....	Country.....		Princeton.....	50.0		Oleomargarine.
4151.....	Country.....		Brazil.....	48.0		Starch Present.
4848.....	Country.....		Terre Haute.....	41.9		Oleomargarine. Not butter.

## CHEESE.

Of the 19 cheeses analyzed all have been pure. The use of preservatives is not uncommon in soft cheese, such as the so-called "Neufchatel" or cream mixtures, but on the whole we find but little evidence of adulteration in this dairy product.

## CONDENSED MILK.

Condensed milk is made by evaporating milk to one-half or one-third its original volume and adding cane sugar. In reporting the results of the analysis of the samples examined, we have given the amount of fat present in the sample and also the amount of fat present in the original milk. The results show that every sample but one examined, was made from normal whole milk; no preservatives were present. Several samples of so-called evaporated cream were analyzed, but proved to be simply whole milk evaporated to a creamlike consistency. Aside from this resemblance they were in nowise condensed cream. Under the new food law this misleading term or name will be abandoned and the product will be sold for what it is, simply evaporated milk.



## UNSWEETENED CONDENSED MILK—PURE.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Per Cent. Fat.	Per Cent. Fat in Original Milk.	Solids.	Ash.	Number Times Condensed.	Remarks
277	"Greenville"	Greenville Milk Condensing Co., Greenville, Ill.	Terre Haute.	7.80	4.17	29.94	1.31	1.87	
1753	"Pet".....	Helvetia Milk Condensing Co., Highland, Ill.	Indianapolis	9.00	4.66	32.07	1.35	1.93	
3678	"Columbia"	Borden's Condensed Milk, N. Y. City.....	Irvington....	7.99	3.22	31.97	1.70	2.42	
3783	"Highland"	Helvetia Milk Condensing Co., Highland, Ill.	Indianapolis	9.00	4.89	30.00	1.29	1.84	
4452	"Top Notch"	Van Camp Packing Co., Effingham, Ill.....	Berne.....	7.50	3.62	28.35	1.45	2.07	

## SWEETENED CONDENSED MILK—PURE.

4454	"Shield".....	Michigan Condensed Milk Co., New York.....		7.80	3.22	74.52	1.69	2.42	
4455	"Star".....	Michigan Condensed Milk Co., New York.....		8.40	3.65	78.40	1.60	2.30	

## SWEETENED CONDENSED MILK—ILLEGAL.

4453	"Leader"....	Michigan Condensed Milk Co., New York.....		6.60	2.71	76.10	1.70	2.43	Made from milk deficient in fat.
------	--------------	--	--	------	------	-------	------	------	----------------------------------

## ICE CREAM.

The product sold as ice cream is of varying composition, the basis of which is a cream or milk mixture flavored and frozen. Genuine ice cream should be made wholly of cream, properly flavored. Such a mixture will not remain in a solid condition long, and the practice of adding some solidifier such as gelatin or gum tragacanth has become common among dealers. Starch may also be employed as a thickener. The U. S. Department of Agriculture standard for ice cream requires that at least 14 per cent. of butter fat be present. Under this standard none of the six samples of ice cream analyzed were pure. Three contained large quantities of gelatin.

## ICE CREAM.

Laboratory Number.	Manufacturer.	Where Collected.	Fat. Per Cent.	Gelatin.	Starch.	Remarks.
4422	Wm. Downey .....	South Bend ..	8.5	None...	None ..	Low in fat.
4423	Chas. Crome .....	South Bend ..	12.0	None...	None ..	Low in fat.
4424	N. Y. Candy Store..	South Bend ..	11.5	Trace...	Trace...	Low in fat.
4425	John Noble .....	South Bend ..	11.5	Much...	None ..	Not pure cream.
4426	Wittner & Hubbick..	South Bend ..	10.0	Much...	None ..	Not pure cream.
4427	Mrs. J. L. Turner....	South Bend ..	7.0	Much...	None ..	Not pure cream.

## BAKING POWDER.

Baking powder is a leavening agent now in general use which has taken the place of the cream of tartar and saleratus mixture formerly employed in raising bread. It acts in the same manner as the older preparation and leavens the bread by the formation within the loaf of carbon dioxid. Baking powder is composed of acid and alkaline constituents so prepared that when brought into contact with water a chemical reaction takes place between the acid and alkaline carbonate with the resulting liberation of carbon dioxid.

The value of a baking powder depends, therefore, on the amount of gas liberated in the process of bread making. A good powder is one so compounded that the acid salt, which may be bitartrate of potassium, calcium acid phosphate, or alum, is present in just the quantity required to set free all of the carbon dioxid in the bicarbonate of soda, the alkali usually used. Normal baking powders will give 10 per cent. and over of their weight as gas. All powders producing less gas are deficient either because of deterioration by age or improper compounding.

In reporting the results we have given the percentage of carbon dioxid capable of being liberated in the process of baking, and have also designated the character of the powder. Several of the samples were not of the composition claimed for them and a large number, 26, or 54.1 per cent., were low in carbon dioxid. Probably many of the powders classed as illegal were up to the standard when packed, but had deteriorated with age. This can not be taken into consideration, however, either by the housewife or the chemist, and it becomes the duty of the manufacturer to recall his stock before it is so old as to be worthless. One sample

contained less than 2 per cent. of available carbon dioxid, and a cook using this powder would have to employ at least 20 teaspoonsfuls to the quart of flour.

## BAKING POWDER—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Available Carbon Dioxid %.	Remarks.
1719	Cream of Tartar	Columbia Grocery Co., Indianapolis	Indianapolis.	12.86	Cream of tartar powder. Pure.
3314	Home-Made ...	Wabash Baking Powder Co., Wabash .....	Columbus ...	13.89	Phosphate powder. Pure.
3362	Good Luck .....	The Southern Mfg. Co., Richmond, Va.	Columbus....	14.70	Alum powder. Pure.
3393	Ladies' Friend.	Canby, Ach & Canby, Dayton, O.	Columbus....	14.23	Phosphate powder. Pure.
3404	Fehring's .....	Wabash Baking Powder Co., Wabash .....	Columbus....	13.11	Alum Phosphate powder. Pure.
3457	Midway .....	J. F. Lowe & Co., Columbus	Columbus....	10.97	Alum phosphate powder. Pure.
3458	Common Sense.	Canby, Ach & Canby, Dayton	Columbus....	12.66	Alum powder. Pure.
3590	Monarch .....	Reid, Murdock & Co., Chicago	Indianapolis.	11.70	Cream of tartar powder. Pure.
3483	Faultless .....	Heekin Spice Co., Cincinnati	Columbus....	10.24	Phosphate powder. Pure.
4193	Rinne's .....	C. H. Rinne .....	Indianapolis.	11.18	Phosphate powder. Pure.
4206	Royal	Canby, Ach & Canby, .....	Lafayette ....	13.25	.....
70	Jubilee .....	Canby, Ach & Canby, Dayton	Elwood.....	13.8	Cream of tartar powder. Pure.
1208	Reliable.....	Grocers' Supply Co., Indianapolis.	Princeton ....	10.19	Alum phosphate powder. Pure.
1413	Club House ...	Franklin MacVeagh Co., Chicago	Huntington..	10.62	Cream of tartar powder. Pure.
1613	American .....	E. Ottenheimer & Son, Louisville	New Albany ..	10.72	Alum phosphate powder. Pure.
4663	Egg.....	Egg Baking Powder Co., New York	Indianapolis.	11.60	Phosphate powder.
4666	Clabber .....	Hulman & Co., Terre Haute	Terre Haute.	10.30	Alum phosphate.
4677	Miami.....	H. C. Porter & Co .....	Peru.....	11.00	.....
5213	Imperial .....	Mayer Bros. Co., Ft. Wayne	Ft. Wayne ...	10.22	.....
5236	.....	Wabash Baking Powder Co., Wabash .....	Nappanee....	14.41	.....
5347	LaBaw's. ....	Wabash Baking Powder Co., Wabash .....	Veedersburg.	11.6	.....
5818	Empire.....	J. B. Digman .....	Richmond ...	14.8	.....
5974	Enterprise .....	Wabash Baking Powder Co., Wabash .....	Greencastle..	15.0	.....

## BAKING POWDER—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Available Carbon Dioxide %.	Remarks.
176	Clabber° .....	Hulman Coffee Co., Terre Haute	Brasil .....	7.02	Alum phosphate powder. Low grade.
1678	Queen Flake...	Northrop, Robertson & Currier, Lansing, Mich.	Salem .....	9.87	Phosphate powder. Below standard.
1681	Bon Bon .....	J. C. Grant Chemical Co., St. Louis	Salem .....	8.91	Alum powder. Low grade.
1749	Egg° .....	Egg Baking Powder Co., New York	Indianapolis.	8.52	Phosphate powder. Low grade.
3315	Kenton° .....	Kenton Baking Powder Co., Cincinnati .....	Columbus...	7.11	Alum phosphate powder. Low grade.
3352	Bon Bon .....	J. C. Grant Chemical Co., E. St. Louis	Columbus ...	8.42	Alum powder. Low grade.
3353	M. O'C.* .....	M. O'Connor & Co., Indianapolis	Columbus....	4.00	Alum phosphate powder. Very low grade.
3354	Calumet* .....	Calumet Baking Powder Co., Chicago .....	Columbus....	2.04	Alum phosphate powder. Very low grade.
3355	Jersey .....	Dayton Spice Mills Co., Dayton, O.	Columbus....	8.05	Alum powder. Low grade.
3364	Lion .....	Wabash Baking Powder Co., Wabash .....	Columbus....	11.89	No phosphate present. Pure but wrongly labeled.
3375	Bakers' Delight° .....	Grocers' Supply Co., Indianapolis	Columbus ...	6.42	Phosphate powder. Low grade.
3376	Reliable .....	Eddy & Eddy, St. Louis.	Columbus....	7.60	Phosphate powder. Low grade.
3383	Olympia .....	Canby, Ach & Canby Co., Dayton, O	Columbus....	5.06	Phosphate powder. Very low grade.
3415	Purity .....	Sheridan & Co., Pittsburgh	Columbus ...	6.33	Phosphate powder. Low grade.
3417	Elk .....	Rethwisch & May, Columbus	Columbus ...	5.70	Very low grade.
3456	Clabber° .....	Hulman Coffee Co., Terre Haute	Columbus....	6.29	Phosphate powder. Low grade.
3458	Yakon .....	Reid, Henderson & Co., Chicago	Columbus....	7.70	Alum phosphate powder. Low grade.
3480	Purity .....	Sheridan & Co., Pittsburgh	Columbus....	4.72	Phosphate powder. Very low grade.
3459	Cameo .....	Cameo Baking Powder Co., Chicago .....	Columbus....	1.94	Alum phosphate powder. Very low grade.
3509	Empress .....	Pettis Dry Goods Co., Indianapolis	Indianapolis.	9.25	Phosphate powder. Low grade.
3591	N. Y. Store's Phosphate	Pettis Dry Goods Co., Indianapolis	Indianapolis.	4.44	Alum phosphate powder. Very low grade.
3608	Whipped Cream	Geo. J. Hammel, Indianapolis	Indianapolis.	8.76	Alum phosphate powder. Low grade.
3653	Pure Cream Tartar	M. J. Stewart, Indianapolis	Indianapolis.	5.32	Alum phosphate powder. Very low grade.
3716	Imperial .....	Criterion Mfg. Co., Indianapolis	Indianapolis.	6.84	Alum powder. Low grade.
6251	Imperial .....	Meyer Bros .....	Ft. Wayne...	9.80	Below standard.

\* Samples were old stock and had undoubtedly deteriorated with age as analyses of fresh goods showed them to be well above the legal standard.

## CREAM OF TARTAR.

Potassium bitartrate, ordinarily known as cream of tartar, is the agent once much used together with sodium bicarbonate or cooking soda, for leavening bread, biscuit, etc. The development of the modern baking powder has largely diminished the use of cream of tartar and now but small quantities are sold. During the year we have examined 256 samples of cream of tartar, collected for the most part from drug stores, of which 248, or 96.9 per cent., of the samples were pure. This condition is somewhat surprising in view of the fact that cream of tartar was formerly one of the most heavily adulterated food products. All of the adulterated samples were bought at grocery stores and consisted of mixtures of alum, gypsum and starch. One of the samples was so carefully compounded that its acidity was exactly that of normal cream of tartar. Other samples were poorly made, and one was so low in acidity that it had no value as a liberator of carbon dioxide.

## COFFEE.

Of the 23 coffee samples analyzed, 15 have been pure and eight were classed as adulterated because of the use of facings or the admixture of chicory and roasted cereals. The adulteration of coffee is now rarely practiced, since the introduction of the cheap Brazilian and Central American products which sell as low as seven cents a pound does away with the necessity of artificial coffee substitutes. Coffee is faced or coated by some manufacturers for the purpose, as they claim, of retaining the aroma of the coffee. Such treatment, however, is more frequently employed to make a low grade coffee look like a better article. The facing or polishing of coffee with sugars, water, albumen or any other preparation, is illegal. But one sample, and that a package coffee, contained chicory. The chief fraud of the coffee trade consists in the sale of inferior grades for the more desirable higher priced berry. The amount of Mocha coffee imported from Arabia each year is but a tithe of the coffee sold as Mocha. The same is true of Java coffees. It is probably true that almost all of the so-called Mocha and Java coffees on the market are nothing but the better grades of Central American coffees.

## COFFEE—LEGAL.

Number.	Brand.	Manufacturer or Retailer.	Where Collected	Remarks.
3065	High Grade.....	G. E. Bursley & Co., Ft. Wayne, Ind.	Ft. Wayne.....	Pure.
3066	Koner Blend.....	F. Widlar & Co., Cleveland, O	Ft. Wayne.....	Pure.
3071	Keystone .....	A. B. Walter & Co., Ft. Wayne, Ind.	Ft. Wayne.....	Pure.
3118	.....	Thompson & Taylor Co., Chicago	South Bend .....	Pure.
3161	.....	Durand & Kasper, Chicago...	Michigan City.....	Pure.
3167	.....	Henry Fiske .....	Michigan City.....	Pure.
3224	.....	McNeil & Higgins Co., Chicago	Michigan City.....	Pure.
3259	Conrad's .....	J. H. Conrad & Co., Chicago	Indianapolis.....	Pure.
3275	Plantation.....	Hulman & Co., Terre Haute	Indianapolis.....	Pure.
3306	.....	Court House Grocery (West)	Indianapolis.....	Pure.
3307	Kona Blend.....	Court House Grocery (West)	Indianapolis.....	Pure.
3308	Best African Java.....	Court House Grocery (West)	Indianapolis.....	Pure.
3386	Arbuckle's Ariosa.....	Arbuckle Bros., New York....	Columbus.....	Colored Coon. labeled legally.
3746	12½c .....	Pettis Dry Goods Co.....	Indianapolis.....	Pure.
3616	Gloria Fruit, substi- tute for coffee.....	John A. Smith Co., Milwaukee, Wis.	Indianapolis.....	Cereal drink. Pure.
3748	12½c.....	Wasson's.....	Indianapolis.....	Pure.

## COFFEE—ILLEGAL.

1762	17½c.....		Indianapolis.....	Adulterated.
3064	.....	Tilfer Coffee Co., Detroit .....	Ft. Wayne.....	Adulterated.
3110	.....	National Grocery Co.....	South Bend .....	Adulterated.
3349	.....		Indianapolis.....	Adulterated.
3385	XXXX.....	W. F. McLaughlin & Co., Chicago	Columbus.....	Adulterated.
3387	Mikado.....		Columbus.....	Adulterated.
3731	Java.....	Court House Grocery.....	Indianapolis.....	Adulterated.
3736	.....	Court House Grocery.....	Indianapolis.....	Adulterated.

## CHOCOLATE AND COCOAS.

Cocoa and chocolate are preparations made from the cocoa bean. The ground kernel of the cocoa bean is known as chocolate. When a portion of the cocoa butter or fat of the bean is removed by pressure, the resulting product is called cocoa. Chocolate and cocoa are adulterated by the admixture of starches, such as arrow-root, wheat and corn starch, or by the use of cocoa shells. Of the 28 samples of cocoa analyzed 22 were pure and six were adulterated. Of the chocolates 21 were pure and two were adulterated. Several samples of sweet chocolate prepared in cake form as a confection contained added starch. One cocoa sample contained a large excess of cocoa shells.

## CHOCOLATE—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Total Ash.	Insol. Ash.	Remarks.
414	Ros. Vanilla Luncheon.....	Cleveland Choc. and Cocoa Co., Cleveland	Vincennes.....	.....	.....	Pure.
448	Monsoon.....	Sprague, Warner & Co., Chicago.....	Washington..	.....	.....	Pure.
1331	Rose.....	Cleveland Choc. and Cocoa Co., Cleveland	Evansville...	1.53	0.78	Pure.
1698	Swiss.....	S. L. Bartlett, Boston	Kokomo.....	1.90	0.65	Pure.
1718	Instantaneous	S. F. Whitman & Son, Philadelphia, Pa.	Indianapolis.	.....	.....	Pure.
1721	Genuine Swiss Milk.	F. L. Cailler.....	Indianapolis.	.....	.....	Pure.
1725	Breakfast Milk..	Peters, Vevay, Switzerland	Indianapolis.	.....	.....	Pure.
1739	Chocol'te Menier	Menier, New York..	Indianapolis.	.....	.....	Pure.
1744	Lowney's Sweet	Lowney.....	Indianapolis.	.....	.....	Pure.
3061	Cleveland Premium No. 1....	Cleveland Choc. and Cocoa Co., Cleveland	Ft. Wayne....	4.08	2.42	Pure.
3109	Menier.....	Menier, Chicago...	South Bend..	.....	.....	Pure.
3121	Knickerbocker..	Manhattan Cocoa and Choc Co., N. Y.	South Bend..	.....	.....	Pure.
3122	Red Ribbon.....	Runkel Bros., New York	South Bend..	.....	.....	Pure.
3123	Wilbur's No. 1..	H. O. Wilbur & Son, Philadelphia, Pa.	South Bend..	.....	.....	Pure.
3226	Vienna.....	Runkel Bros., New York	Lafayette....	.....	.....	Pure.
3425	Puritan Pure Foods.....	Puritan Pure Foods Choc., N. Y. & Chi.	Columbus....	3.37	2.22	Pure.
3671	Blue Ribbon....	Knickerbocker Choc. Co., New York	Irvington.....	.....	.....	Pure.
3697	Premium.....	Hershey Choc. Co., Lancaster, Pa.	Irvington....	.....	.....	Pure.
3698	Vanilla Sweet...	Hershey Choc Co....	Irvington.....	.....	.....	Pure.
3699	Premium No. 1..	W. Baker & Co., Winchester, Va.	Irvington.....	.....	.....	Pure.
3700	Premium.....	Rockwood & Co., N. Y.	Irvington.....	.....	.....	Pure.

## CHOCOLATE—ILLEGAL.

447	Batavia.....	Batavia Preserving Co., Batavia, N. Y.	Washington..	1.50	.75	Contains foreign starch. Adulterated.
3155	Swiss Process...	Croft & Allen Co., Philadelphia	Michigan City	1.18	.64	10 per cent. foreign starch. Adulterated.

## COCOA—LEGAL.

374	Justice.....	Wm. H. Baker, Syracuse, N. Y.	Vincennes...	3.37	2.22	Pure.
375	Rose's.....	Cleveland Choc. and Cocoa Co., Cleveland	Vincennes...	5.09	2.88	Pure.
376	Hershey's.....	Hershey's Choc. Co., Lancaster, Pa.	Vincennes...	.....	.....	Pure.
1337	Red Ribbon.....	Runkel Bros., New York	Evansville...	5.48	2.50	Pure.
1570	Powell's Breakfast.....	Alex. M. Powell, New York	Jeffersonville	5.58	3.18	Pure.
1655	Pure.....	Brooks Chocolate Co., Chicago	New Albany.	.....	.....	Pure.
1697	Golden Rod.....	Rockwood Co., New York	Kokomo.....	4.29	2.65	Pure.
1723	Blooker's Cocoa.	F. C. Blooker, Amsterdam	Indianapolis.	.....	.....	Pure.

## COCOA—LEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Total Ash.	Insol. Ash.	Remarks.
1724	Blooker's Dutch Cocoa.....	F. C. Blooker, Amsterdam	Indianapolis.	.....	.....	Pure.
1745	Purity .....	Huyler, New York...	Indianapolis.	.....	.....	Pure.
1752	Golden Lion.....	Rockwood & Co., New York	Indianapolis.	4.55	2.84	Pure.
1755	Pure Soluble.....	C. J. Van Houten & Zoon, Holland.....	Indianapolis.	.....	.....	Pure.
3011	Bedford.....	J. H. Barker & Co., Brooklyn, N. Y.	Kokomo.....	5.23	2.61	Pure.
3119	Wilbur's Breakfast .....	H. O. W. Wilbur & Son., Phila'phia, Pa.	South Bend.	4.44	2.32	Pure.
3120	American Breakfast .....	Manhattan Choc. and Cocoa Co., New York	South Bend.	.....	.....	Pure.
3416	Croft's.....	Croft & Allen, Philadelphia, Pa.	Columbus....	4.58	2.97	Pure.
3426	Puritan Pure Foods .....	Puritan Pure Foods Co., New York.....	Columbus....	4.87	2.83	Pure.
3593	Bedford.....	Knickerbocker Choc. Co., New York.....	Irvington....	4.30	2.67	Pure.
3640	London .....	H. O. Wilbur & Sons, Philadelphia	Indianapolis.	3.15	1.70	Contains arrow-root starch, but is properly labeled.
4029	Leader.....	Atkinson & Co., New York	Indianapolis	.....	.....	Pure.
4030	Empire .....	Atkinson & Co., New York	Indianapolis.	.....	.....	Pure.
4850	Rose's.....	Cleveland C. C. Co...	Indianapolis.	.....	.....	Pure.

## COCOA—ILLEGAL.

476	Prepared Breakfast, Eureka...	Kenwood Preserve Co., Chicago.....	Washington..	6.33	3.80	Contains excess of shells. Adulterated.
1589	Webb's .....	Jos. Webb & Co., Milton, Mass.	Jeffersonville	7.09	3.85	Excess of shells. Adulterated.
1715	Justice .....	Wm. H. Baker, Syracuse, N. Y.	Kokomo.....	4.32	2.25	Contains foreign starch. Adulterated.
3763	Purina.....	Halston Purina Co., St. Louis	Indianapolis.	1.71	.94	25 per cent. foreign starch. Adulterated.
3780	Homeopathic....	J. S. Frye & Son, London, Eng.	Indianapolis.	1.96	1.17	50 per cent. arrow-root starch. Adulterated.
5319	Webb's.....	Jos. Webb & Co., Milton, Mass.	Covington ...	7.47	5.08	Excess of shells.

## TEAS.

But few teas were examined and these were all pure, if we except the addition of coloring matter usually known as facing. The Board of Tea Experts of the Treasury Department which has fixed the standard of purity, quality and fitness for consump-



tion of tea imported into the United States, allows the importation of teas which have a minimum amount of coloring substances not deemed unwholesome or deleterious to the consumer. In line with this decision we have not classified faced teas as adulterated.

#### LEMON EXTRACTS.

In the analysis of lemon essences or extracts we have required that at least five per cent. of pure lemon oil should be present. Many terpeneless lemon extracts are sold as pure extracts, but as they contain no lemon oil, or are made from oils from which the terpenes have been removed, they must be considered to be adulterated. The sale of compound lemon extract is not allowable. The value of an extract for flavoring purposes depends upon the amount of pure lemon oil present, and the compounding of oil of lemon grass, citral and dilute alcohol makes a fraudulent product.

The action of certain manufacturers of flavoring extracts in attempting to override the standard which we have adopted for lemon extract by claiming that their products made from citral, or with a "washed out oil," are pure lemon extract, and therefore not adulterated, calls for special attention on the part of wholesalers and retailers to the fact that our standard for lemon extract reads as follows:

"Lemon extract shall contain at least five per cent. of the pure oil of lemon dissolved in alcohol."

Under this ruling, which is in accordance with the standard set by the United States government and by all the States that have adopted a standard, the extracts made from the "terpeneless" lemon oil and from "washed out oil" must be considered to be adulterated. While oil of lemon owes much of its characteristic aroma to citral, it is none the less true that lemon extract, as we know it, does not depend for its flavor on the citral alone, but that its character is influenced to a considerable degree by the terpenes present in normal oil of lemon. Limonene, the chief terpene of lemon oil, is an essential constituent, and when blended with the citral gives the true flavor of lemon.

To claim that extract made from citral and "washed out oil" is made from lemon oil is as fallacious as the statements of the vinegar manufacturer that his compound of acetic acid, water and color is cider vinegar because the acetic acid is present.

Terpeneless extracts can legally be sold if they are so labeled, but when lemon extract is ordered, only the standard article should be supplied.

The results of our analyses show that but few pure goods are sold, and that most of the so-called lemon extracts are inferior substitutes, of little value to the housewife. We found but 56 pure extracts out of 343 examined, while 287, or 83.7 per cent., were either low in lemon oil, contained no lemon oil at all, or were artificially colored with yellow dyes.

## LEMON EXTRACT—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
4611	Dean's.....	Wabash Baking Powder Co., Wabash.....	Roachdale....	9060	63.26	1.70	Not natural.
4681	.....	Parke, Davis Co., Detroit.....	Laporte.....	8335	88.64	2.00	Natural.
4864	Mayflower...	A. Coburn & Co., Philadelphia.....	Indianapolis.	9104	46.91	5.10	Natural.
4989	.....	E. R. Durkee, New York.....	Indianapolis.	9453	43.71	6.00	Natural.
4991	.....	Jos. Burnett & Co., Boston.....	Indianapolis.	8306	91.00	9.50	Natural.
5025	Our Dream...	Steele & Atwood, Chicago.....	Frankfort.....	8570	82.54	5.00	Natural.
5066	.....	G. E. Callaway, Cambridge City.....	Cambridge Cy	8051	97.71	5.90	Natural.
5278	.....	McMonagle & Rogers, Middleton, N. Y. ....	Muncie.....	8170	94.76	6.50	Tropaeolin.
5329	.....	Hulman & Co., Terre Haute.....	Attica.....	8430	87.24	5.20	Natural.
5359	Diadem.....	Schnull & Co., Indianapolis.....	Veedersburg..	8370	89.08	7.0	Natural.
5361	Viking.....	E. R. Webster Co., Cincinnati.....	Covington.....	9469	43.10	0.0	Dinitrocresol
5838	.....	Geo. Loesch, Drug Store, Ft. Wayne.....	Ft. Wayne....	8495	85.10	7.6	Natural.
5849	.....	Christian Bros., Drug Store.....	Ft. Wayne....	8330	90.30	5.4	Natural.
5881	.....	Ed Mertz, Drug Store.....	Ft. Wayne....	8369	89.10	6.5	Natural.
5930	.....	McMonagle & Rogers, Ohio.....	Ft. Wayne....	8360	89.70	6.6	Natural.
5931	Puritan.....	Moellering Bros., Ft. Wayne.....	Ft. Wayne....	8698	77.70	5.7	Not natural.
5976	Eddy's.....	Eddy & Eddy, St. Louis.....	Greencastle...	8701	77.5	5.9	—
6023	.....	H. N. Janner, Goshen.....	Goshen.....	8444	86.81	6.7	Not natural.
6050	.....	F. H. Benzer, Elkhart.....	Elkhart.....	8355	89.54	7.9	Not natural.
6056	.....	Kenyon Medical Co., Elkhart.....	Elkhart.....	8548	83.31	7.5	Not natural.
6067	.....	Houseworth Bro., Elkhart.....	Elkhart.....	9396	47.36	14.9	Colorless.
6094	.....	Coonley Drug Co., South Bend.....	South Bend..	8698	77.71	5.0	Natural.
6123	.....	H. L. Spohn, South Bend.....	South Bend..	8341	89.96	5.8	Not natural
6148	.....	S. T. Applegate, South Bend.....	South Bend..	8342	89.92	6.8	Natural.
6152	.....	Leo Eliel, South Bend.....	South Bend..	8456	86.42	5.4	Natural.
6249	Coon.....	Thompson & Taylor Co., Chicago.....	Indianapolis.	8668	78.80	6.0	Natural.
6292	Real.....	Jos. Strong Co., Terre Haute.....	Terre Haute..	8380	88.76	5.6	Natural.
6313	.....	Jos. Strong Co., Terre Haute.....	Terre Haute..	8342	89.92	6.4	Natural.
6335	.....	J. M. Callender, Laporte.....	Laporte.....	8408	87.96	5.6	Natural.
6348	.....	T. H. Boyds, Laporte.....	Laporte.....	8281	91.71	5.0	Not natural.

## LEMON EXTRACT—LEGAL.—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
6389	.....	W. H. Williams, Valparaiso	Valparaiso...	.8644	79.72	5.1	Natural.
6396	.....	Heineman & Sievers, Valparaiso	Valparaiso...	.9443	44.64	6.5	Not natural.
6423	.....	Oak Drug Store, Plymouth	Plymouth....	.8819	75.14	5.4	Natural.
6485	.....	Chickasaw Drug Store, Peru	Peru.....	.8269	92.07	8.6	Natural.
6506	.....	Porter the Druggist, Peru	Peru.....	.8318	90.64	5.6	Natural.
6514	.....	Thieband & Co., Peru	Peru.....	.8305	91.00	12.2	Not natural.
6537	.....	Ed M. Moran, Michigan City	Michigan City	.9420	46.00	5.7	Natural.
6552	.....	Otto Kloepfer, Michigan City	Michigan City	.8581	82.16	6.0	Natural.
6565	.....	Whiting Drug Co., Whiting	Whiting.....	.8281	91.71	5.7	Natural.
197	.....	Joseph Burnett Co., Boston	Terre Haute..	.8249	92.68	10.0	Natural.
303	Chapman's...	Chapman & Smith, Chicago, Ill.	Martinsville..	.8665	78.93	5.16	Natural.
385	.....	John N. Bey & Co., Vincennes	Vincennes...	.8559	82.93	6.20	Natural.
433	Silver Seal...	Walsh, Boyle & Co., Chicago, Ill.	Washington..	.8236	93.06	5.30	Natural.
1092	.....	Schaefer & Schaefer, Chicago	Huntington...	.8235	93.09	6.25	Natural.
1429	Club House...	Franklin McVeagh Co., Huntington	Huntington...	.8498	85.00	5.50	Natural.
1288	Club House...	Franklin McVeagh Co., Evansville...	Evansville...	.8281	91.72	.....	Natural.
2086	.....	D. C. Peters, Laporte	Laporte.....	.8345	89.84	5.02	Natural.
2088	.....	Kaplinsky & Moran, Michigan City	Michigan City	.8281	91.69	5.00	Natural.
2206	.....	Heineman & Sievers, Valparaiso	Valparaiso...	.8278	93.00	8.70	Natural.
2419	.....	J. B. Wehrle, Anderson	Anderson.....	.8173	94.71	6.10	Natural.
2505	.....	E. P. Whinery, Muncie	Muncie.....	.8241	92.91	8.10	Natural.
2727	.....	Hatchins & Murphy, Kokomo	Kokomo.....	.8309	91.00	7.80	Natural.
2858	.....	E. H. Wilson, Indianapolis	Indianapolis..	.8294	91.34	7.90	Natural.
2474	.....	H. H. Ice, Muncie	Muncie.....	.8238	93.00	5.70	Natural.

Laboratory Number.	Brand.	Manufacturer.	Town.	Lemon Oil.	Alcohol by Volume.	Remarks.
3973	.....	F. W. Green	Elwood.....	6.89	.....	Pure.
3986	.....	Conner's Drug Store	New Albany..	7.87	92.71	Pure.
3989	Owl.....	E. R. Webster & Co., Cincinnati	.....	5.34	94.97	Pure.
4024	.....	Boener-Fry Co., Iowa City, Iowa	Albion.....	6.87	91.00	Pure.

## LEMON EXTRACTS—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
16	Premium.....	Grocers' Supply Co., Indianapolis	Columbus....	.8745	76.01	2.25	Tropaeolin.
19	Waldorf.....	Edwin, New York	Columbus....	.9734	22.73	0.0	Naphthol yellow.
21	Improved Brand.....	J. C. Grant Chem. Co., Chicago, Ill.	Columbus....	.9821	14.27	.....	

## LEMON EXTRACTS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
29	.....	Reid, Henderson & Co., Chicago, Ill.	Franklin.....	.9713	24.78	0.0	Naphthol yellow.
62	Gold Arrow ...	Newton Tea and Spice Co., Cincinnati, O.	Elwood .....	.9439	44.86	0.0	Natural.
80	Roids Superior	Roids Extract Co., Chicago, Ill.	Alexandria ..	87.93	74.22	2.12	Natural.
84	Standard .....	Atwood & Steele Co., Chicago, Ill.	Alexandria ..	.9789	19.39	0.0	Naphthol yellow.
127	Seely's .....	Seely Mfg. Co., Detroit, Mich.	Muncie.....	.8560	82.90	4.25	Natural.
128	Sachs-Prudens	Sachs-Prudens, Dayton, O.	Muncie.....	.9657	29.95	0.0	Tropaeolin.
133	Link's.....	Link & Nelson, Paris, Ill.	Brazil.....	.8412	87.79	6.56	Turmeric.
134	Shaffer's .....	Wabash Baking Powder Co., Wabash, Ind.	Brazil.....	.9078	62.41	.95	Natural.
157	Eddy's Double Strength .....	Eddy & Eddy, St. Louis, Mo.	Brazil.....	.8611	80.96	5.20	Dinitroresol.
161	Napoleon .....	Forbes Chem. Co., Chicago, Ill.	Brazil.....	.9911	6.48	1.34	Naphthol yellow.
164	Keystone.....	Bement, Rea & Co., Terre Haute, Ind.	Brazil.....	.9690	26.95	0.0	Naphthol yellow.
178	Chapman's.....	Chapman & Smith, Chicago, Ill.	Brazil.....	.8631	80.19	5.40	Naphthol yellow.
180	Rex.....	Frank Tea & Spice Co., Cincinnati, O.	Brazil.....	.9408	46.14	0.0	Naphthol yellow.
185	Viking .....	E. R. Webster & Co., Cincinnati, O.	Terre Haute..	.9415	46.32	0.0	Natural.
190	Jos. Strong & Co. Real.....	Terre Haute Coffee & Spice Mills, T. Haute	Terre Haute..	.8508	84.67	7.80	Dinitroresol.
191	Pure and Sure.	Frank Tea & Spice Co., Cincinnati, O.	Terre Haute..	.9324	51.12	0.0	Turmeric.
193	VanDuzer's Fruit .....	Van Duzer & Co., New York	Terre Haute..	.8259	92.39	5.00	Turmeric.
195	Bastine's.....	Bastine & Co., New York	Terre Haute..	.8530	83.94	3.10	Natural.
198	Standard .....	Gillettes Chem. Works, Chicago, Ill.	Terre Haute..	.9559	37.41	0.0	Naphthol yellow.
245	Baker's Pride.	Terre Haute Extract & Cheese Co., T. Haute	Terre Haute..	.9685	27.40	0.0	Naphthol yellow.
271	Norton's Standard .....	Bement, Rea & Co., Terre Haute	Terre Haute..	.9797	16.52	1.10	Natural.
272	Crown .....	C. W. Bauermeister, Terre Haute	Terre Haute..	.9366	48.97	0.0	Tropaeolin.
273	Ideal .....	C. W. Bauermeister, Terre Haute	Terre Haute..	.9648	30.73	0.0	Dinitroresol.
286	Our Pride .....	Gast & Strosler, Louisville, Ky.	Martinsville .	.9840	12.49	0.0	Natural.
287	Tropical Fruit.	C. A. Schrader, Indianapolis	Martinsville .	.9819	14.46	.759	Naphthol yellow.
289	Diadem.....	Schnull & Co., Indianapolis	Martinsville .	.8719	76.98	3.52	Natural.
290	Eddy's Special	Eddy & Eddy, St. Louis, Mo.	Martinsville .	.8589	81.84	5.06	Dinitroresol.
302	Viking .....	E. R. Webster & Co., Cincinnati, O.	Martinsville .	.9591	35.20	0.0	Trop

## LEMON EXTRACTS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
304	Our Special	Reed & Henderson Chicago, Ill.	Martinsville.	.9709	25.17	0.0	Naphthol yellow.
309	Delmonico	Roosa & Ratliff, Cincinnati, O.	Martinsville.	.9371	51.48	0.0	Naphthol yellow.
311	Monogram Triple	J. C. Perry & Co., Indianapolis, Ind.	Martinsville.	.9020	65.73	0.92	Natural.
336	Bey's	Frank Tea & Spice Co., Cincinnati, O.	Vincennes.	.9383	48.05	0.0	Natural.
349	Special	Eddy & Eddy, St. Louis, Mo.	Vincennes.	.9197	57.10	0.0	Dinitroresol.
350	Immense	Winter Spice & Ext. Co., Chicago, Ill.	Vincennes.	.9784	17.81	0.0	Naphthol yellow.
352	Oriental	Jas. H. Forbes, St. Louis, Mo.	Vincennes.	.9837	12.77	0.0	Natural.
358	Silver Shield	John N. Bey, Vincennes, Ind.	Vincennes.	.9692	26.77	0.0	Naphthol yellow.
362	Delmar	Franklin Extract Co., St. Louis, Mo.	Vincennes.	.9785	17.70	0.0	Naphthol yellow.
370	Our Own	B. C. Bult Mass., Vincennes, Ind.	Vincennes.	.9318	51.43	0.0	Natural.
381	Ben Hur	Bain & Chapman, St. Louis, Mo.	Vincennes.	.8708	77.36	2.50	Dinitroresol.
382	Splendid	Jas. H. Forbes, St. Louis, Mo.	Vincennes.	.9501	41.26	0.0	Naphthol yellow.
383	Risch's Perfect	Risch Bros., Vincennes, Ind.	Vincennes.	.9338	50.42	0.0	Natural.
396	Blanke's Exposition	C. F. Blanke & Co., St. Louis, Mo.	Vincennes.	.8839	72.42	3.10	Natural.
413	Perfection	Cincinnati Extract Co., Cincinnati, O.	Vincennes.	.9624	32.65	0.0	Natural.
429	Dr. Pierce's	Dr. Pierce's Flav. Ext. Co., Indianapolis, Ind.	Washington.	.9388	47.78	0.0	Natural.
431	Crema	Royal Remedy & Ext. Co., Dayton, O.	Washington.	.9616	33.31	0.0	Dinitroresol.
446	Superior	E. W. Gillett, Chicago, Ill.	Washington.	.9184	57.74	0.0	Dinitroresol.
449	Gilt Edge	Frank Tea & Spice Co., Cincinnati, O.	Washington.	.9269	53.77	0.0	Dinitroresol.
467		L. V. Logan, New York	Washington.	.9332	50.72	0.0	Tropæolin.
531	Kingery	Kingery, Phil'a, Pa.	Brasil	.8484	85.46	3.60	Natural.
548		Bunton Drug Co.	Terre Haute	.8755	75.64	1.50	Natural.
572		J. S. Madison	Terre Haute	.8260	92.36	5.00	Turmeric.
645		H. J. Werker	Vincennes.	.9219	56.11	0.0	Naphthol yellow.
663		W. C. Watjen	Vincennes.	.8986	66.43	1.12	Natural.
681		R. G. Moore	Vincennes.	.8700	77.64	.72	Turmeric.
694		C. S. Miller	Vincennes.	.9274	53.53	.56	Turmeric.
747		Clark & Sons	Princeton	.8325	90.43	5.30	Turmeric.
762		F. S. Clapp	Washington	.8862	71.50	1.56	Dinitroresol.
778		A. F. Schmidt	Washington	.8631	80.19	4.00	Turmeric.
801		J. N. Jones	Washington	.8245	92.80	9.90	Tropæolin and turmeric.
855		J. F. Bomm	Evansville	.8265	92.21	3.75	Natural.
872		Meek & Albers	Evansville	.9455	43.87	0.0	Natural.
885		H. J. Schlaepper	Evansville	.8335	90.14	3.75	Turmeric.
910		W. H. Fogg	Mt. Vernon	.8239	55.18	1.10	Natural.
928		Dawson & Boyce	Mt. Vernon	.8398	88.22	5.00	Turmeric.
940		D. & H. Rosenbaum	Mt. Vernon	.9003	65.69	.31	Natural.
964		Porter the drugist	Peru	.8237	93.03	7.31	Dinitroresol.
990		Blue Drug Store	Peru	.8833	72.65	2.30	Dinitroresol.
1001		Chicasaw Pharm.	Peru	.9205	56.77	1.77	Dinitroresol.
1010		Bradley Bros.	Watash	.8213	93.67	5.47	Turmeric.

## LEMON EXTRACTS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
1025	.....	R. E. Clark.....	Wabash.....	.8218	93.74	6.25	Tropæolin & tur
1055	.....	Butterbaugh & Co	Wabash.....	.9355	49.55	0.0	Natural.
1077	.....	M. Kaylor.....	Huntington...	.8476	85.73	5.50	Turmeric.
1145	Crown.....	Crown Chemical Works, Evansville	Oakland City	.9221	74.27	.62	Natural.
1146	Tri-state.....	Lewis Seitz Grocery Co., Evansville	Oakland City	.9110	60.52	.81	Dinitrocresol.
1159	.....	Ranke & Nussbaum, Evansville	Ft. Wayne...	.9393	47.51	.94	Natural.
1163	Crystal Pearl	Evansville Chemical Works, Evansville	Oakland City	.9292	52.68	.75	Dinitrocresol.
1175	.....	Dreier & Bro.....	Ft. Wayne...	.8803	73.81	2.10	Turmeric.
1186	.....	H. G. Sommera	Ft. Wayne...	.8195	94.13	3.11	Turmeric.
1198	.....	Meyer & Bro. & Co	Ft. Wayne...	.8490	85.28	3.00	Natural.
1221	.....	Pellens & Lewis	Ft. Wayne...	.9071	62.74	.75	Dinitrocresol.
1243	5-Cent Special.	Frank Tes & Spice Co., Cincinnati	Mt. Vernon...	.9319	51.38	0.0	Dinitrocresol.
1287	White Wing...	Groceries Chemical Works, Evansville	Evansville...	.9838	50.42	0.0	Dinitrocresol.
1289	Standard.....	Cook Grocery Co., Evansville	Evansville...	.9717	24.38	0.0	Dinitrocresol.
1297	Priscilla.....	Franklin MacVeach Co., Chicago, Ill.	Evansville...	.9629	32.27	0.0	Turmeric.
1348	Sauer's.....	C. F. Sauer Co., Richmond, Va.	Evansville...	.9674	78.58	5.00	Tropæolin.
1368	Bain's Faultless.....	Meyer Bain Mfg. Co., St. Louis	Evansville...	.9544	38.47	0.0	Tropæolin.
1369	Napoleon.....	Forbes Chemical Co. Chicago	Evansville...	.9923	5.55	0.0	Natural.
1392	Gilt Edge.....	Berdan & Co., Toledo	Huntington...	.9631	27.77	.50	Naphthol yellow.
1407	Mader's.....	Wabash Baking Powder Co., Huntington	Huntington...	.9383	48.03	0.0	Naphthol yellow.
1444	Kline's Pure..	Wabash Baking Powder Co., Huntington	Huntington...	.9399	47.18	0.0	Naphthol yellow.
1446	Puritan.....	Moellering & Millard Co., Ft. Wayne	Huntington...	.9556	37.62	1.50	Natural.
1488	St. George....	Lewis Seitz Grocery Co., Evansville	Boonville...	.8662	79.04	2.93	Natural.
1490	Pure Food....	Eddy & Eddy, St. Louis	Boonville....	.9437	44.98	0.0	Tropæolin.
1505	Star and Crescent Oriental	Bement & Seitz, Evansville	Huntingburg.	.9665	37.02	.31	Natural.
1509	Our Choice...	E. W. Gillette, Chicago	Huntingburg.	.9743	21.89	1.06	Natural.
1526	Kehoes.....	Wabash Baking Powder Co., Jeffersonville	Jeffersonville	.9223	55.93	.43	Natural.
2692	.....	F. C. Jones.....	Alexandria...	.8758	75.49	3.16	Dinitrocresol.
1564	.....	Drexler, Heft & Co	Jeffersonville	.9331	50.77	3.75	Tropæolin.
1573	Cherokee.....	A. Englehard & Son Co., Louisville	Jeffersonville	.9767	19.59	0.0	Dinitrocresol.
1580	Boss.....	Boss Chem. Wks., N. Y.	Jeffersonville	.9776	16.82	0.34	Dinitrocresol.
1581	Oak Flavoring Extract.....	Oak Extract Co., Louisville	Jeffersonville	.9700	26.04	0.0	Dinitrocresol.
1603	Columbia.....	Columbia Extract Co., N. Y.	New Albany.	.9672	28.59	0.31	Natural.
1617	Owl.....	E. R. Webster & Co., Cincinnati, O.	New Albany..	.8745	76.01	2.90	Tropæolin.

## LEMON EXTRACTS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
1620	Big 5.....	Banner Ext. Co., Cincinnati, O.	New Albany.	.9688	35.43	0.12	Dinitrocesol.
1652	Ottenheimer Fine.....	Ottenheimer, Louisville, Ky.	New Albany.	.9112	60.89	0.71	Natural.
1653	Rutter's.....	E. W. Gillette & Co., Chicago, Ill.	New Albany.	.8320	90.58	5.06	Dinitrocesol.
1665	King B.....	Ullman, Dreifus & Co., Cincinnati, O.	Salem.....	.9537	38.96	1.00	Natural.
1674	White Cap.....	Heekin Spice Co., Cincinnati, O.	Salem.....	.9375	48.48	0.0	Tropæolin.
1687	Puritan.....	Glazebrook, Rutherford, Thomas Co., Louisville, Ky.	Salem.....	.9459	43.63	0.0	Natural.
1688	Crescent.....	Ohio Falls Extract Co., Louisville, Ky.	Salem.....	.9792	16.96	0.43	Natural.
1760	.....	Atlantic Chem. Co., Chicago, Ill.	Indianapolis.	.9692	26.77	0.0	Naphthol yellow.
1764	Purity.....	Banner Ext. Co., Cincinnati, O.	Indianapolis.	.9567	36.89	0.0	Tropæolin.
1765	Special.....	Souders Mfg. Co., Dayton, O.	Indianapolis.	.9222	55.97	0.0	.....
1768	Concentrated.....	.....	Indianapolis.	.9754	20.80	0.0	.....
1820	.....	H. B. McCord.....	Auburn.....	.9125	60.30	0.31	Natural.
1834	.....	H. M. Phillips.....	Auburn.....	.9314	51.63	1.24	Natural.
1848	.....	Housworth Bros.....	Elkhart.....	.8566	82.69	3.80	Tropæolin.
1872	.....	Central Drug Co.....	Elkhart.....	.8371	89.05	3.80	Natural.
1883	.....	F. J. Goldman.....	Elkhart.....	.9387	47.83	0.0	Natural.
1921	.....	H. N. Jenner.....	Goshen.....	.9472	85.87	4.83	Natural.
1932	.....	O. J. Beeson.....	Goshen.....	.8965	67.32	1.93	.....
1946	.....	G. W. Rule.....	Goshen.....	.8467	86.04	5.80	Turmeric.
1967	.....	Public Drug Store.....	South Bend.....	.8206	93.77	3.50	Dinitrocesol.
1986	.....	C. Conley & Co.....	South Bend.....	.8935	48.52	1.87	Dinitrocesol.
2020	.....	R. P. Milton.....	South Bend.....	.8876	70.93	2.37	Dinitrocesol.
2062	.....	T. H. Boyd & Co.....	Laporte.....	.9126	60.25	.56	Natural.
2123	.....	Bicknell & Co.....	Hammond.....	.8401	87.82	1.12	Dinitrocesol.
2136	.....	J. W. Weiss.....	Hammond.....	.8209	93.77	5.00	Dinitrocesol.
2146	.....	M. Kolb.....	Hammond.....	.8298	91.23	3.30	Natural.
2165	.....	Summer's Pharmacy.....	Hammond.....	.8365	89.24	3.85	Turmeric.
2176	.....	Corner Drug Store.....	Valparaiso.....	.8424	87.37	2.03	Natural.
2188	.....	W. O. Letherman.....	Valparaiso.....	.8264	92.24	10.40	Tropæolin.
2238	.....	Ben Fisher.....	Logansport.....	.8209	93.77	6.56	Dinitrocesol.
2249	.....	G. W. Hoffmann.....	Logansport.....	.9418	46.14	0.0	Dinitrocesol.
2261	.....	W. H. Porter.....	Logansport.....	.9072	62.69	.32	Dinitrocesol.
2277	.....	Red Cross Pharmacy.....	Logansport.....	.9051	63.64	3.25	Natural.
2297	.....	M. W. Murphy.....	Delphi.....	.8492	85.19	5.77	Dinitrocesol.
2311	.....	Lytle & Orr.....	Delphi.....	.9457	43.75	0.0	Dinitrocesol.
2323	.....	W. W. Johnson.....	Lafayette.....	.8215	93.62	2.81	Natural.
2373	.....	Wells Yeager Best Co.....	Lafayette.....	.8665	78.93	2.56	Turmeric.
2393	.....	Schults & Boswell.....	Lafayette.....	.8329	90.32	1.56	Turmeric.
2399	.....	Anderson Drug Co.....	Anderson.....	.8451	86.58	4.30	Dinitrocesol.
2460	.....	Buck & Brickley.....	Anderson.....	.8904	69.75	1.60	Natural.
2483	.....	People's Drug Co.....	Muncie.....	.8785	91.60	6.40	Turmeric.
2520	.....	V. E. Silverburg.....	Muncie.....	.8361	89.36	2.48	Natural.
2544	.....	Physicians Drug Store.....	Muncie.....	.9321	51.27	0.0	Turmeric.
2554	.....	W. H. Bereley.....	Alexandria.....	.8398	88.19	7.00	Turmeric.
2581	.....	E. C. Robinson.....	Alexandria.....	.9085	62.07	0.0	Natural.
2610	.....	Stringfellow & Co.....	Elwood.....	.8257	92.45	8.06	Tropæolin.
2621	.....	F. W. Green.....	Elwood.....	.8381	88.73	3.50	Natural.
2628	.....	J. H. Kute.....	Elwood.....	.8544	83.46	1.06	Turmeric.
2642	.....	F. L. Saylor.....	Elwood.....	.8857	71.70	1.84	Dinitrocesol.
2659	.....	W. Cogswell.....	Elwood.....	.8255	92.51	2.65	Natural.
2669	.....	Jay Bros.....	Kokomo.....	.8918	69.19	1.50	Dinitrocesol.
2685	.....	L. Mehlig.....	Kokomo.....	.8269	92.08	6.25	Dinitrocesol.

## LEMON EXTRACTS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
2699		W. Scott.....	Kokomo.....	.8310	90.88	5.90	Dinitrocresol.
2709		Hollowell & Ryan.....	Kokomo.....	.9400	47.13	0.0	Dinitrocresol.
2757		F. H. Hubbard.....	Kokomo.....	.9801	52.25	.20	Natural.
2770		J. C. Lindsay.....	Tipton.....	.9465	43.26	0.0	Tropæolin.
2779		Moore Bros.....	Tipton.....	.8202	93.95	3.44	Natural.
2794		S. Rosenthal.....	Tipton.....	.9183	41.95	0.0	Tropæolin.
2806		L. T. Harker.....	Tipton.....	.8470	85.94	1.56	Turmeric.
2857		L. B. Carr.....	Indianapolis.....	.8214	93.64	4.68	Natural.
2882		F. H. Carter.....	Indianapolis.....	.8223	93.41	4.81	Natural.
2945		Weber Drug Co.....	Indianapolis.....	.8210	93.75	3.98	Natural.
2999	Revolution.....	W. H. Hoyt & Co. Chicago.....	Kokomo.....	.9138	59.72	1.03	Natural.
3002	Pure.....	Arctic Mfg. Co., Grand Rapids.....	Kokomo.....	.9633	53.03	0.0	Dinitrocresol.
3007	Sailor's.....	Atwood & Steele, Chicago.....	Kokomo.....	.9165	58.58	.50	Dinitrocresol
3015	Jenning's.....	Jersey Extract Co., Grand Rapids.....	Kokomo.....	.9554	37.76	0.0	Natural.
3086	Schmidt's Pure.....	T. H. Johnson Mfg. Co., De- troit, Mich.....	Ft. Wayne.....	.9160	43.56	.02	Turmeric.
3154	Rival.....	Duran & Kasper, Chicago, Ill.....	Michigan City.....	.8777	74.82	2.83	Natural.
3171	Special.....	Lakota Mfg. Co., Chicago, Ill.....	Michigan City.....	.9680	27.86	0.0	Natural.
3186	Epique (Comp.).....	Stewart & Co.....	Hammond.....	.9676	28.22	0.0	
3186	American.....	American Chemi- cal Works, Chi- cago, Ill.....	Hammond.....	.9732	22.92	0.0	Natural.
3276	Perfection.....	Cincinnati Ex- tract Co., Cin- cinnati, O.....	Indianapolis.....	.9631	32.11	0.0	
3278	Pure Concen- trated.....	Hulman Co., Terre Haute.....	Indianapolis.....	.8560	82.69	4.40	Dinitrocresol.
3365		Crescent Extract Co., New York.....	Columbus.....	.9735	22.64	0.0	Natural.
3386		Standard Mfg. Co., Decatur, Ill.....	Columbus.....	.8507	84.70	4.20	Natural.
3396	Pro Bond.....	M. O'Connor & Co., Indianapolis.....	Columbus.....	.9602	34.40	.56	Natural.
3413		Eddy & Eddy, St. Louis.....	Columbus.....	.8735	76.35	0.0	Dinitrocresol.
3433	Monogram.....	J. C. Perry & Co., Indianapolis.....	Columbus.....	.8997	65.94	1.60	Natural.
3439	Chapman's.....	Chapman & Smith Co., Chicago, Ill.....	Columbus.....	.8863	71.46	4.06	Tropæolin.
3461	High Grade.....	Eddy & Eddy, St. Louis.....	Columbus.....	.8363	89.14	10.00	Dinitrocresol.
3464	Deeter's Double Strength.....	J. P. Deeter Co., Chicago, Ill.....	Columbus.....	.9587	35.51	0.0	
3465	Lyon's Old Re- liable.....	W. W. Lyons & Sons, North Vernon.....	Columbus.....	.9754	20.80	0.0	Natural.
3543		A. G. Baldwin.....	Noblesville.....	.9330	50.82	0.0	Natural.
3558		Charlton, Indianapolis.....	Indianapolis.....	.9829	13.52	1.2	Natural.
3606		Pettis Dry Goods Co.,.....	Indianapolis.....	.8253	89.61	5.87	Turmeric.
3613	Empire State.....	Geo. J. Hammel.....	Indianapolis.....	.9601	34.47	0.0	Turmeric.
3618		J. H. Forbee, St. Louis.....	Indianapolis.....	.9167	43.13	0.0	Dinitrocresol.
3658		Zipp Mfg. Co., Cleveland, O.....	Indianapolis.....	.8369	89.11	7.00	Dinitrocresol.
3659		Zipp Mfg. Co., Cleveland, O.....	Indianapolis.....	.8324	90.46	6.88	Dinitrocresol.
3682	Perfection.....	Cincinnati Ex- tract Co., Cin- cinnati, O.....	Indianapolis.....	.9624	32.65	0.0	Dinitrocresol.



## LEMON EXTRACTS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
3686	Chapman's....	Chapman-Smith, Chicago	Indianapolis.	.8642	79.65	6.75	Dinitroresol.
3721	.....	Geo. Tenney Co., Indianapolis	Indianapolis.	.9401	47.08	2.68	Tropæolin.
3774	.....	Van Duzer & Co., New York	Indianapolis.	.8427	87.34	6.40	Turmeric.
3846	.....	C. O. Maple .....	Bloomington.	.9199	57.02	0.0	
3848	.....	Bowles Bros., Drugs .....	Bloomington.	.8728	90.35	1.09	
3853	.....	J. W. O'Harrow .....	Bloomington.	.8308	90.93	4.68	
3386	.....	Blavis Chemical Co., Jeffersonville	Jeffersonville	.9399	41.18	0.0	
3879	.....	Wm. C. Pfau, Jeffersonville	Jeffersonville	.8266	93.85	3.10	Natural.
3890	.....	Chas. D. Knoefel, New Albany	New Albany	.9313	51.68	.20	
3896	.....	B. Doolittle, Jeffersonville	Jeffersonville	.9624	33.65	3.84	
3904	.....	C. E. Creclius, New Albany	New Albany	.9385	47.94	0.0	Tropæolin.
3908	.....	McDonald-stock-dell Co. ....	New Albany	.8271	92.02	4.50	Tropæolin.
3921	.....	Floyd Parks, Jeffersonville	Jeffersonville	.8927	68.83	1.50	Natural.
39.8	.....	Doherty's Drug Store .....	Jeffersonville	.8430	87.24	5.30	Turmeric.
3935	Souders' Regular.....	Royal Remedy & Extract Co., Dayton, O. ....	Noblesville....	.9346	50.01	0.0	Natural.
3936	Ko-We-Ba.....	Kothe, Wells & Bauer, Indianapolis	Noblesville....	.9564	37.03	.40	Natural.
2530	.....	.....	Muncie.....	.8361	89.36	2.43	Natural.
2544	.....	.....	Muncie.....	.9321	51.27	0.00	Turmeric.
4856	Red Cross .....	John Doltean .....	Indianapolis.	.9319	51.38	.5	Naphthol yellow.
4866	.....	T. H. & B. Amt., Indianapolis	Indianapolis.	.....	.....	0.0	.....
4916	.....	Lafayette Chem. Wks., Lafayette	Indianapolis.	.9796	16.46	2.7	Tropæolin.
4990	Double Strength.....	J. P. Dieter & Son, Chicago	Indianapolis.	.9651	30.44	0.0	Dinitroresol.
5029	Messina .....	Jennings & Smith Grand Rapids	Frankfort .....	.9548	38.16	.3	Not natural.
5039	McCook & Baker's .....	Souders, Dayton.	Crawf'dsville	.9230	47.82	1.0	Naphthol yellow.
5011	Robb's .....	W. F. Robb .....	Crawf'dsville	.9800	16.26	.3	Naphthol yellow
5064	Crown .....	F. A. Frohnappel	Cambridge City	.9895	7.72	.5	Dinitroresol.
5065	Happer's .....	Happer, Findlay, Ohio	Cambridge City	.9697	26.33	0.0	Not colored.
5077	Napoleon.....	Forbes Chem. Co Chicago	Indianapolis.	.9927	5.25	2.3	Naphthol yellow.
5103	Quantity .....	Gus. Klippel .....	Indianapolis.	.9806	15.67	1.	Not colored.
5157	Quality .....	Wabash Bak. Pow. Co., Wabash	Edinburg .....	.9079	62.36	1.0	Natural.
5210	High Grade .....	Johnson Drug Co. Rushville	Rushville .....	.9806	15.67	2.3	Colorless.
5266	.....	Parke Davis & Co. Detroit	Muncie. ....	.9278	53.48	.3	Natural.
5327	.....	Geiger-Tinney, Indianapolis	Attica .....	.8990	66.25	3.6	Tropæolin.
5360	Empire .....	McNeil Higgins Co., Chicago	Covington....	.8170	94.76	0.0	Coal tar.
5363	Gold Seal.....	C. Callahan Co. Lafayette	Covington....	.9189	57.45	.3	Natural.
5703	.....	F. W. Green, Elwood	Elwood .....	.....	.....	3.24	
5825	.....	.....	Ft. Wayne .....	.8718	77.00	3.4	Natural.
5851	.....	.....	Ft. Wayne .....	.9353	49.64	1.2	
5865	.....	.....	Ft. Wayne .....	.9445	44.5	2.8	Not natural.
5911	Keystone .....	A. R. Walter .....	Ft. Wayne .....	.9473	43.8	.2	Tropæolin.
5972	Enterprise.....	Wabash Bak. Pow. Co., Wabash	Greencastle..	.9239	55.2	1.0	Coal tar.
5975	Koon .....	Brinkmeyer-Kuhn Co. Indpls	Greencastle..	.9369	49.1	.4	Naphthol yellow.

## LEMON EXTRACTS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol by Volume.	Lemon Oil.	Color.
6005	.....	Lafayette Chem. Wks., Lafayette	Goshen .....	.9757	20.5	.2	Coal tar.
6011	.....	.....	Goshen .....	.8490	85.27	3.4	Coal tar.
6018	.....	.....	Goshen .....	.9493	41.70	.3	Not natural.
6021	.....	Steele-Wideles, Chicago	Goshen .....	.9518	40.30	5.1	Dinitrocresol.
6033	Telmo .....	Franklin MacVeagh, Chicago	Goshen .....	.9594	35.0	5.1	Coal tar.
6060	.....	.....	Elkhart .....	.9469	43.00	0.0	Colorless.
6064	.....	.....	Elkhart .....	.9614	40.55	0.0	Natural.
6074	.....	.....	Elkhart .....	.8367	89.16	2.5	Not natural.
6085	Swing. ....	B. Deenbarg Co. Kalamazoo	Elkhart .....	.8655	79.32	5.6	Dinitrocresol.
6088	.....	.....	Elkhart .....	.8450	81.36	2.3	Natural.
6144	.....	.....	South Bend .....	.8490	85.27	5.0	Dinitrocresol.
6128	.....	.....	South Bend .....	.9412	46.46	1.7	Dinitrocresol.
6136	.....	.....	South Bend .....	.9600	34.52	1.3	Aniline.
6257	Baker's Pride.	Terre Haute Ex & Chem. Co.	Brazil .....	.....	.....	.9	Not natural.
6262	Cole's Leader.	Wabash Bak. Pow. Co., Wabash	Brazil .....	.9254	54.48	1.0	Coal tar.
6267	Keystone .....	Bement Res. Co., Terre Haute	Brazil .....	.8768	75.14	5.0	Tropælin.
6271	Our Special....	Reid Henderson Co., Chicago	Brazil .....	.9766	19.67	.5	Coal tar.
6291	American .....	American Ex. Co. Cincinnati, O.	Terre Haute .....	.9766	19.67	0.0	Tropælin.
6351	.....	McNeill Higgins Co., Chicago	Laporte .....	.9725	13.92	0.0	Dinitrocresol.
6363	Old U. S. P. ....	.....	Hammond .....	.8406	87.96	4.4	Natural.
6383	.....	.....	Valparaiso .....	.9458	43.71	0.0	Naphthol yellow.
6394	Blossom .....	McNeill Higgins Co., Chicago	Valparaiso .....	.9535	39.80	0.0	Naphthol yellow.
6410	.....	.....	Plymouth .....	.9482	42.29	1.9	Naphthol yellow.
6417	.....	.....	Plymouth .....	.8266	92.18	4.3	Natural.
6444	.....	Shore Medicine Co., Rochester	Rochester .....	.9404	46.81	3.4	Artificial.
6473	Battle King ...	Huntington Gro. Co.	Rochester .....	.9621	32.87	0.0	Artificial.
6491	.....	.....	Peru .....	.9167	58.80	.9	Artificial.
6533	.....	.....	Michigan City .....	.8502	84.88	2.2	Dinitrocresol.
6558	.....	.....	Whiting .....	.9547	38.22	3.1	Not natural.
6577	.....	.....	Hammond .....	.8490	85.27	.5	Naphthol yellow.
6581	Mammoth .....	Franklin MacVeagh, Chicago	Hammond .....	.9685	8.64	0.0	Naphthol yellow.
6584	Epicure .....	S. E. Wart & Co., Pittsburg	Hammond .....	.9540	38.78	0.0	Artificial.
6601	.....	Felix W. Klemm	Hammond .....	.9525	39.80	.3	Naphthol yellow.

## VANILLA EXTRACTS.

We have examined 189 samples of vanilla extract, and found 53 to be pure and 136, or 71.9 per cent., adulterated or below standard. Many druggists' samples were made from the vanilla bean, but because of faulty methods of preparation are low in vanillin content and must therefore be classed as impure. A true vanilla extract is made by macerating the vanilla bean with sugar and extracting the mass with diluted alcohol. Adulteration of vanilla extract consists of substituting, wholly or in part, the inferior and cheaper Tonka bean for the vanilla bean, or the addi-

tion of the artificial coumarin to weak extracts of the true bean, or even preparing solutions of artificial vanillin or artificial coumarin in dilute alcohol, colored with caramel or coal tar dye to represent the true extract.

Extract of Tonka has a decided value as a flavoring medium, and if compounded with extract of vanilla, can be sold if labelled "Extract of Vanilla and Tonka."

## VANILLA EXTRACTS—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Town.	Vanillin.	Remarks.
3970	.....	Boller Ice Cream Co. ....	Marion .....	.....	Pure.
3984	.....	Atlantic Import Co., New York .....	Wabash .....	.16	Pure.
3987	Owl .....	E. R. Webster Co., Cincinnati .....	Sent in by them .....	.06	Pure.
3996	.....	Dr. B. E. Miller .....	Albion .....	.08	Pure.
3999	Premium .....	Conkle's .....	Indianapolis .....	.125	Pure.
4007	Cub. ....	Kothe, Wells & Bauer, Indianapolis .....	Indianapolis .....	.137	Pure.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Vanillin.	Coumarin.	Caramel.	Remarks.
131	Link's .....	Link & Nelson .....	Brazil .....	.06	None .....	None .....	Pure.
667	.....	W. C. Watien .....	Vincennes .....	.06	None .....	None .....	Pure.
177	Chapman's .....	Chapman & Smith Co. ....	Brazil .....	.1125	None .....	None .....	Pure.
1767	Diadem .....	Schnull & Co. ....	Indianapolis .....	.075	None .....	None .....	Pure.
3414	.....	Eddy & Eddy, St. Louis .....	Columbus .....	.10	None .....	None .....	Pure.
3582	.....	Dr. Price's, Chicago .....	Indianapolis .....	.1125	None .....	None .....	Pure.
650b	.....	.....	.....	.10	None .....	None .....	Pure.
1489	St. George .....	Lewis Seitz Grocery Co. ....	Boonville .....	.0975	None .....	None .....	Pure.
2928	.....	I. N. Heims .....	Indianapolis .....	.10	None .....	None .....	Pure.
2978	.....	Navin's Pharmacy, No. 1 .....	Indianapolis .....	.075	None .....	None .....	Pure.
3522	.....	Will E. Axline .....	Noblesville .....	.10	None .....	None .....	Pure.
4612	Dean's .....	Wabash Bak. Pow. Co., Wabash .....	Roachdale .....	1.0600	None .....	None .....	Pure.
4680	.....	John Wyeth & Bros. Phila .....	Laporte .....	.1500	None .....	None .....	Pure.
4946	.....	Lafayette Chem. Wks., Lafayette .....	Indianapolis .....	.100	None .....	Present.	Properly labeled.
4705	.....	Hollowell & Ryan .....	Kokomo .....	.250	None .....	None .....	Pure.
5000	Van Duzer .....	Van Duzer Ex Co., New York .....	Indianapolis .....	.100	None .....	Present.	Pure.
5037	.....	Shapp & Dolme .....	Crawfords'ille .....	.100	None .....	None .....	Pure.
5067	.....	G. E. Callaway, Cambridge City .....	Camb'ge City .....	.0625	None .....	None .....	Pure.
5146	Purity .....	Decatur Ex. Co., Decatur, Ill. ....	Franklin .....	.0875	None .....	None .....	Pure.

## VANILLA EXTRACTS—LEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Vanillin.	Coumarin.	Caramel.	Remarks.
5158	.....	Wabash Bak. Pow.Co., Wabash	Edinburg ...	.0625	None...	Present.	Pure.
5235	.....	Home Remedy Co., Laporte ...	Laporte .....	.....	None...	None...	Pure.
5280	.....	Nickey Drug Store.....	Muncie.....	.0625	None...	None...	Pure.
5335	.....	J. P. Dieter Co., Attica.....	Attica.....	.100	None...	None...	Pure.
5345	Hulman's...	Hulman Ex. Co. Terre Haute	Attica.....	.075	None...	Present.	Pure.
5348	Souder's...	Royal Remedy & Ex. Co., Dayton	Veedersburg.	.100	None...	None...	Pure.
5354	.....	D. H. Wallace ...	Veedersburg.	.0625	None...	None...	Pure.
5702	.....	F. W. Green.....	Elwood.....	.0625	None...	None...	Pure.
5707	Royal Blue.	W. J. Quan & Co., Chicago	Elwood.....	.100	None...	None...	Pure.
5717	Zipp's.....	Zipp Mfg. Co., Cleveland	Alexandria...	.0625	None...	None...	Pure.
5804	.....	Chas. W. Ralston	Evansville...	.0625	None...	None...	Pure.
5805	.....	Home Remedy Co., Laporte ...	Laporte .....	.0200	None...	None...	Pure.
5929	.....	McMonagle & Rodgers.....	Fort Wayne...	.0875	None...	None...	Pure.
5932	Puritan ....	Moellering Co., Fort Wayne...	Fort Wayne...	.0875	None...	None...	Pure.
5973	Enterprise.	Wabash Bak. Pow.Co., Wabash	Greencastle..	.0800	None...	None...	Pure.
5986	Monogram.	J. C. Perry & Co., Indianapolis	Greencastle..	.1125	None...	None...	Pure.
6036	LightHouse	National Gro. Co., Chicago....	Goshen.....	.100	None...	None...	Pure.
6140	.....	Archie Mfg. Co., Grand Rapids	South Bend..	.075	None...	Present	Pure.
6250	Coon .....	Thompson & Taylor Co., Chicago.	Indianapolis.	.1125	None...	None...	Pure.
6285	Cole's .....	Wabash Bak. Leader ...	Brazil .....	.2500	None...	None...	Pure.
6286	Keystone ..	Bement Rea Co., Terre Haute	Brazil .....	.1250	None...	None...	Pure.
6312	.....	Jos. Strong & Co., Terre Haute	Terre Haute..	.0675	None...	None...	Pure.
6395	Opal .....	J. A. Tolman, Chicago	Valparaiso...	.250	None...	Present	Pure.
6443	.....	Shore Med. Co., Rochester....	Rochester....	.1125	None...	None...	Pure.
6585	Renroh ....	Henry Horner Co., Chicago...	Hammond ...	.0675	None...	None...	Pure.
6586	Klemn's....	F. W. Klemn, Chicago	Hammond ...	.100	None...	Present	Pure.
6602	Seal .....	Kenwood Pres. Co., Chicago....	Hammond ...	.1125	None...	None...	Pure.

## VANILLA EXTRACTS—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Vanillin.	Coumarin.	Caramel.	Remarks.
30	.....	Reid, Henderson & Co.....	Franklin .....	.0625	None...	None...	Van'lin synthetic.
50	Climax.....	Roads Bros. Mfg. Co.....	Anderson ....	.05	None...	Present.	Van'lin synthetic.
57	Superior ...	Superior Extract Co.....	Anderson ....	.075	None...	Present.	Van'lin synthetic.
1993	Gilt Edge..	Berdan & Co.....	Huntington..	.075	None...	Present.	Van'lin synthetic.

## VANILLA EXTRACTS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Vanillin.	Coumarin.	Caramel.	Remarks.
1394	Venus.....	Royal Rem. & Ex. Co.....	Huntington...	.025	Present.	Present.	Van'lin syn- thetic.
1408	Mader's....	Wabash Bak. Pow. Co.....	Huntington...	.10	Present.	Present.	Van'lin syn- thetic.
1430	Club House.	Franklin Mc- Veagh Co.....	Huntington...	.05	None...	Present.	Colored with caramel.
1438	Hoosier....	Atwood & Steele.	Huntington...	.075	Present.	Present.	Van'lin syn- thetic.
132	Dauntless ..	Hulman Extract Co.....	Brazil.....	.00	Present.	Present.	Artificial.
135	Shaffer's...	Wabash Bak. Pow. Co.....	Brazil.....	.075	None...	Present.	Colored with caramel.
642	.....	H. J. Werker.....	Vincennes...	.0375	None...	Present.	Colored with caramel.
162	Napoleon ..	Forbes Chem. Co.	Brazil.....	.00	Present.	Present.	Artificial.
163	Keystone ..	Bement, Rea & Co.	Brazil.....	.00	Present.	Present.	Artificial.
179	Rex .....	Frank Tea & Spice Co.....	Brazil.....	.10	Present.	Present.	Van'lin syn- thetic.
676	.....	R. G. Moore.....	Vincennes...	.0875	None...	Present.	Colored with caramel.
192	Pure and Sure.....	Frank Tea & Spice Co.....	Terre Haute..	.0375	Present.	Present.	Van'lin syn- thetic.
194	VanDuser's Fruit.....	Van Duser & Co..	Terre Haute..	.025	None...	None...	Pure, low grade.
690	.....	C. S. Miller.....	Vincennes...	.025	None...	Present.	Pure, low grade.
196	Genesee....	Sprague, Warner & Co.....	Vincennes...	.00	Present.	Present.	Van'lin syn- thetic.
199	Snow White	Franklin Mc- Veagh Co.....	Terre Haute..	.0875	Present.	None...	Van'lin syn- thetic.
1761	.....	Lafayette Chem. Works.....	Indianapolis.	.00	Present.	Present.	Van'lin syn- thetic.
1766	Koon .....	Brinkmeyer, Kuhn & Co.....	Indianapolis.	.0375	Present.	Present.	Van'lin syn- thetic.
3316	Pure and Sure.....	Frank Tea & Spice Co.....	Columbus....	.1125	Present.	Present.	Artificial.
226	.....	E. H. Bindley & Co.....	Terre Haute..	.00	Present.	None...	Artificial.
3366	.....	Crescent Extract Co.....	Columbus....	.00	Present.	Present.	Van'lin syn- thetic.
270	Norton's Standard.	Bement, Rea & Co	Terre Haute..	.00	Present.	Present.	Van'lin syn- thetic.
274	Ideal. ....	C. W. Bauerneis- ter.....	Terre Haute..	.125	Present.	Present.	Van'lin syn- thetic.
337	Bey's Pure.	Frank Tea & Spice Co.....	Vincennes...	.075	Present.	Present.	Van'lin syn- thetic.
340	Jewel .....	E. Bierhaus .....	Vincennes...	.00	None...	None...	Artificial.
3394	.....	Standard Mfg. Co	Columbus....	.00	Present.	Present.	Artificial.
3397	King B.....	Ulmann, Dreifus Co.....	Columbus....	.00	Present.	Present.	Artificial.
348	Special.....	Eddy & Eddy .....	Vincennes...	.05	Present.	None...	Van'lin syn- thetic.
351	Oriental....	Jas. H. Forbes...	Vincennes...	.00	Present.	Present.	Artificial.
357	Silver Shield.....	John N. Bey.....	Vincennes...	.05	Present.	Present.	Van'lin syn- thetic.
360	Colored....	Hulman & Co....	Vincennes...	.075	Present.	Present.	Van'lin syn- thetic.
361	.....	E. Bierhaus & Sons.....	Vincennes...	.0625	None...	Present.	Van'lin syn- thetic.
363	Delmar....	Franklin Extract Co.....	Vincennes...	.00	Present.	Present.	Artificial.
3419	Golden Rod	Kothe, Wells & Bauer.....	Columbus....	.25	Present.	Present.	Van'lin syn- thetic.
384	.....	John Bey & Co...	Vincennes...	.00	None...	Present.	Artificial.
837	.....	John Lavel & Son	Evansville...	.05	None...	Present.	Colored with caramel.

## VANILLA EXTRACTS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Vanillin.	Coumarin.	Caramel.	Remarks.
411	Pure Food	Standard Chem. Co.	Evansville ...	.00	None ...	Present.	Artificial.
412	Perfection..	Perfection Ext. Co.	Evansville ...	.025	Present.	Present.	Van'lin syn- thetic.
869		Meek & Albers..	Evansville ...	.05	Present.	None ..	Van'lin syn- thetic.
490	Crane .....	Royal Rem. & Ex. Co.	Washington..	.0375	Present.	Present.	Van'lin syn- thetic.
434	Silver Seal.	Walsh, Boyle & Co.	Washington..	.00	None ...	None ...	Artificial.
442		Royal Rem. & Ex. Co.	Washington..	.00	Present.	Present.	Artificial.
450	Gilt Edge ..	Frank Tea & Spice Co.	Washington..	.00	Present.	Present.	Artificial.
468		L. V. Logan .....	Washington..	.00	Present.	Present.	Artificial.
926		Dawson & Boyce.	Mt. Vernon ..	.00	None ...	Present.	Artificial.
427c				.075	Present.	Present.	Van'lin syn- thetic.
1131	Tropic Fruit		Oakland City	.00	Present.	Present.	Artificial.
1132	Gilt Edge ..	A. B. Judson .....	Oakland City	.00	Present.	None ...	Artificial.
943		D. & H. Rosenbaum.....	Mt. Vernon ..	.075	None ...	Present.	Colored with caramel.
1161	Diamond..	Ragan Bros .....	Evansville ...	.00	Present.	Present.	Artificial.
1162	Crystal Pearl.....	Evansville Chem. Works.	Evansville ...	.00	Present.	Present.	Artificial.
966		Porter the Drug- gist .....	Peru.....	.00	Present.	Present.	Artificial.
982		Blue Drug Store.	Peru.....	.025	None ...	Present.	Pure, low grade.
3612	Splendid...	J. H. Forbes .....	Indianapolis.	.05	Present.	Present.	Van'lin syn- thetic.
1196	Pure.....		Princeton....	.09	None ..	None ...	Artificial.
3615	Empire State .....	Geo. J. Hammel.	Indianapolis.	.025	Present.	Present.	Van'lin syn- thetic.
1064		Chickasaw Pharm- acy .....	Peru.....	.0375	None ...	Present.	Artificial.
1011		Bradley Bros.....	Wabash .....	.00	None ...	Present.	Artificial.
3657			Indianapolis.	.00	Present.	None ..	Artificial.
1244	10c Special.	Frank Tea & Spice Co.	Mt. Vernon... .	.00	Present.	Present.	Artificial.
3663	Perfection..	Cincinnati Ex. Co.	Indianapolis.	.00	Present.	Present.	Artificial.
1056		Butterbaugh & Co.	Wabash .....	.075	None ...	Present.	Col. with caramel.
1286	Reliable....	Grocers' Chem. Wks.	Evansville...	.00	Present.	Present.	Artificial.
1086		Schaefer & Schaefer.	Huntington..	.0375	None ..	None ...	Artificial.
3718		Indpls. Fancy Gro. Co.....	Irrington ....	.075	Present.	Present.	Vanil'n syn- thetic.
3719			Irrington ....	.075	Present.	Present.	Vanil'n syn- thetic.
1346	Lion.....	H. Karn & Co....	Evansville...	.125	Present.	Present.	Vanil'n syn- thetic.
1347	Sauer's.....	C. F. Sauer Co....	Evansville...	.1125	None ...	Present.	Col. with caramel.
3772			Indianapolis.	.0875	None ...	Present.	Col. with caramel.
1188		H. G. Sommers ..	Ft. Wayne...	.0875	None ...	Present.	Col. with caramel.
1203		Meyer Bros. & Co.	Ft. Wayne...	.0875	None ...	Present.	Col. with caramel.
716A				.0625	Present.	Present.	Artificial.
1501	Oriental....	Bement & Seits..	Huntingburg..	.025	Present.	Present.	Van'lin syn- thetic.
3943	Regular.....	Royal Remedy & Extract Co....	Noblesville ..	.025	None ...	Present.	Var'lin syn- thetic.
737B				.025	None ...	None ...	Low grade.
1526	Green City.	G. C. Pharmacy Co.	Jeffersonville	.00	Present.	Present.	Artificial.
738B				.025	None ...	None ...	Low grade.
1532	Crescent....	A. Holmes.....	Jeffersonville	.00	Present.	Present.	Low grade.
750A				.00	None ...	None ...	Low grade.

## VANILLA EXTRACTS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Vanillin.	Coumarin.	Caramel.	Remarks.
1839		H. M. Phillips ..	Auburn .....	.00	None ...	Present.	Low grade.
1551	Kingan's Best.....	Kingan Bro. ....	Jeffersonville	.0375	Present.	Present.	Van'lin syn- thetic.
1574	Cherokee.....	A. Englehard & Son .....	Jeffersonville	.00	None ...	Present.	Artificial.
1579	Model.....	E Ottenheimer Bros .....	Jeffersonville	.00	Present.	Present.	Artificial.
1867		Central Drug Store .....	Elkhart.....	.075	None ...	Present.	Col. with caramel.
1889		F. J. Goldman ..	Elkhart.....	.075	None ...	Present.	Col. with caramel.
1618			New Albany ..	.00	Present.	Present.	Artificial.
1619	Big 5 .....	Banner Extract Co .....	New Albany ..	.25	Present.	Present.	Artificial.
1917		H. N. Jenner ..	Goshen.....	.0375	None ...	Present.	Low grade.
1664	King B.....	Ulmann, Dreyfus & Co .....	Salem .....	.0375	Present.	Present.	Van'lin syn- thetic.
1685	Better than Best.....	Ulmann, Dreifus & Co .....	Salem .....	.0375	Present.	Present.	Van'lin syn- thetic.
2015		R. P. Milton ....	South Bend..	.10	None ...	Present.	Col. with caramel.
3000	Revolution.	W. H. Hoyt & Co.	Kokomo.....	.00	None ...	None ...	Artificial.
3006	Sailors .....	Atwood & Steele.	Kokomo.....	.00	Present.	Present.	Artificial.
3036	Schmidt's Pure.....	T. H. Johnson Mfg. Co .....	Ft. Wayne...	.06	Present.	Present.	Van'lin syn- thetic.
2067		T. H. Boyd & Co.	Laporte .....	.0375	None ...	Present.	Low grade.
2990		Woodson & Wil- lits .....	Michigan City .....	.06	None ...	Present.	Col. with caramel.
2161			Michigan City .....	.00	None ...	Present.	Artificial.
3170	Special.....	Dakota Mfg. Co..	Michigan City .....	.00	Present.	Present.	Artificial.
3277	Perfection ..	Cincinnati Ext. Co .....	Indianapolis.	.00	Present.	Present.	Artificial.
2299		H. M. Murphy ...	Delphi .....	.025	None ...	None ...	Low grade.
2316		Lytle & Orr .....	Delphi .....	.0375	None ...	None ...	Low grade.
2357		J. D. Bartlett ..	Lafayette ....	.00	None ...	Present.	Artificial.
2461			Anderson ....	.0375	None ...	Present.	Low grade.
2487		People's Drug Store .....	Muncie.....	.0375	Present.	None ...	Low grade.
2515		V. E. Silverburg..	Muncie.....	.0375	None ...	None ...	Low grade.
2420		T. W. Green .....	Elwood.....	.0375	None ...	Present.	Low grade.
2631		J. H. Kute .....	Elwood.....	.00	None ...	Present.	Artificial.
2716		Hollowell & Ryan	Kokomo .....	.00	None ...	None ...	Artificial.
2728		Hutchings & Murphy .....	Kokomo.....	.00	None ...	Present.	Artificial.
2793		S. Rosenthal .....	Tipton.....	.175	Present.	Present.	(butyric ether).
2814		H. Mehlig .....	Tipton.....	.075	Present.	None ...	Van'lin syn- thetic.
2898		H. J. Huder .....	Indianapolis.	.0375	None ...	Present.	Col. with caramel.
3501		C. L. Mitchell....	Noblesville ..	.00	None ...	None ...	Artificial.
4857	Red Cross		Indianapolis.	.075	Present.	Present.	Adulterated.
5020	Perfection.	Shafer & Co.....	Frankfort....	.025	Present.	Present.	Adulterated.
5167	Gold Arrow	Newton Tea & Spice Co., Cin- cinnati .....	Columbus....	.200	Present.	None ...	Adulterated.
5170	High Grade.	Robbins & Co., Greensburg, Md.	Columbus....	.200	Present.	Present.	Adulterated.
5242	Our Best ..	Best & Son .....	Muncie .....	.100	None ...	None ...	Not genuine.
5296		Sachs-Penders Co., Dayton....	Anderson ....	.0750	Present.	Present.	Improperly labeled.
5341	Mammoth..	Franklin McVeagh, Chi- cago.....	Williamsport	.000	Present.	Present.	Artificial.

## VANILLA EXTRACTS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Vanillin.	Coumarin.	Caramel.	Remarks.
5977	Standard..	Standard Chemical Works, St. Louis .....	Greencastle..	.075	Present.	Present.	Improperly labeled.
5979	Vanilla Flavor....	Cincinnati Ex. Co. ....	Greencastle..	.100	Present.	Present.	Improperly labeled.
6064	Acme.....	Acme Ex. Co., Jackson	Elkhart.....	.125	Present.	Present.	Adulterated.
6086	Swing.....	B. Dessenburg Co., Kalamazoo.	Elkhart.....	.0375	None...	None...	Below standard.
6474	.....	Huntington Gro. Co. ....	Rochester....	.1125	Present.	Present.	Adulterated.

## MISCELLANEOUS FLAVORING EXTRACTS.

Under this head we have classed a variety of products occasionally used for flavoring cakes, confections and dessert preparations.

But four out of twenty-four samples examined were legal. In most cases the goods were misbranded or improperly labeled, most of the pineapple, banana, strawberry, raspberry, peach extracts, etc., being sold as pure fruit extracts.

As a matter of fact it is impossible to make them from the fruits, and they must be made from solution in alcohol of synthetic organic preparations known as compound ethers. Some of the compound ethers possess a remarkable resemblance to fruits. Butyric ether has a distinct pineapple flavor, and a mixture of amyl acetate and butyric ether counterfeits very closely the flavor of the banana.

If these extracts are marked "Artificial Fruit Flavors" they can be legally sold.

## BANANA EXTRACT—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Specific Gravity.	Alcohol, per cent. by Vol.	Color.	Remarks.
63	Standard...	Jacques Atwood Co., Chicago and St. Louis .....	Elwood .....	.9642	33.60	Naphthol yellow...	Not properly labeled. Not properly labeled.
3722	.....	Geiger-Tinney Co., Indianapolis	Irrington ....	.9075	62.55	Tropæolin.	



## STRAWBERRY—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Place Where Collected.	Specific Gravity.	Alcohol, per cent. by Vol.	Color.	Polarization.	Orange Oil, per cent.
1412	Hopper's...	Hopper & Co., Findlay, O.	Huntington..	.9109	60.99	Anilin dye	Properly labeled.	

## STRAWBERRY—ILLEGAL.

3720	.....	Geiger-Tinney Co., Indianapolis	Irvington ....	.9075	62.55	Anilin dye	Not properly labeled.	
------	-------	------------------------------------	----------------	-------	-------	------------	-----------------------	--

## PINEAPPLE—LEGAL.

1410	Cooks and Bakers...	Souders & Co., Dayton, O.	.....	.9380	48.20	Dinitro cresol ....	Properly labeled.	
------	---------------------	------------------------------	-------	-------	-------	---------------------	-------------------	--

## PINEAPPLE—ILLEGAL.

285	.....	Geiger-Tinney Co., Indianapolis	Martinsville.	.8956	67.69	Tropæolin.	Not properly labeled.	
20	Old Home..	J. C. Grant Chem- ical Co., Chicago	Columbus ....	.9646	30.49	Naphthol yellow...	Not properly labeled.	
1409	Mader's....	Wabash Bak. Pow- der Co., Wabash, Ind. ....	Huntington..	.9511	40.41	Colorless..	Not properly labeled.	
1439	Standard...	Jaques Atwood & Co., Chicago ....	Huntington..	.9345	42.52	Naphthol yellow...	Not properly labeled.	
3723	.....	Geiger-Tinney Co., Indianapolis	Irvington ....	.9144	59.59	Tropæolin.	Not properly labeled.	

## MISCELLANEOUS EXTRACTS—ILLEGAL.

88	Nectar Ext., "Hopper"	C. H. Hopper & Co., Findlay, O.	Alexandria	.9485	42.12	.....	Not properly labeled.	
1411	Rose Ext...	E. W. Gillett, Chicago	Huntington..	.8786	74.48	.....	Not properly labeled.	
1428	Peach Ext., "Club House"	Franklin Mac- Veagh & Co., Chicago .....	Huntington..	.8803	73.81	.....	Not properly labeled.	
6303	Almond....	Pettis Dry Goods Co .....	Indianapolis.	.9107	61.10	.....	Not properly labeled.	
3604	Nutmeg....	Pettis Dry Goods Co .....	Indianapolis.	.8901	69.88	.....	Not properly labeled.	
3607	Ginger .....	Pettis Dry Goods Co .....	Indianapolis.	.9205	56.77	.....	Not properly labeled.	

## ORANGE EXTRACT—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Place Where Collected.	Specific Gravity.	Alcohol, per cent by Vol.	Color.	Polarisation.	Orange Oil per cent.
56	Standard...	Jaques Atwood & Co., Chicago and St. Louis ..	Anderson .....	.9457	43.75	Naphthol yellow ..	+ .2	.075
87	"Hopper" ..	C. H. Hopper & Co., Findlay, O.	Alexandria ..	.8543	69.09	Natural...	+ .8	.80
1437	"Standard"	Jaques Atwood & Co., Chicago ...	Huntington...	.9439	44.80	Naphthol yellow ..	+ .1	.037
3602	.....	Pettis Dry Goods Co.	Indianapolis.	.8172	85.88	Natural...	+ 9.4	3.55
5285	Ft. Dearb'n	W. M. Hoyt & Co.	Anderson.....	.9460	44.18	Not natural, artificial ..	.....	.....
6057	.....	DeBoe-King Co.	Elkhart.....	.....	62.82	Not natural, artificial ..	.....	.....

## ORANGE EXTRACT—LEGAL.

4386	.....	Zipp & Co., Cleveland, O.....	Michigan City .....	.....	.....	.....	+ 30.1	5.64
------	-------	-------------------------------	---------------------	-------	-------	-------	--------	------

## RASPBERRY—LEGAL.

4522	Hopper's...	E. H. Hopper & Co., Findlay, O..	.....	.9230	55.60	Methyl violet...	Properly labeled.
------	-------------	----------------------------------	-------	-------	-------	------------------	-------------------

## RASPBERRY—ILLEGAL.

1454	Double .....	E. W. Gillett, Chicago	Huntington..	.9747	21.49	Veg. color.	Not properly labeled.
3614	.....	Van Duser & Co..	Indianapolis.	.9365	49.02	Veg. color.	Not properly labeled.

## HONEY.

Of the 35 samples of honey analyzed but six, or 17.1 per cent., were impure. Comb honey is not subject to adulteration, but strained honey is frequently mixed with glucose or sugar syrup. We have found some samples purporting to be pure "White Clover" honey and containing a piece of honey comb, to be nothing but glucose syrup.

## HONEY—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Polarization.		Remarks.
				Di- rect.	In- vert.	
90		Cleveland Health Food Co.,				
160	Weber's White Clover.....	Cleveland, O. Weber Honey Co.,	Alexandria..	-19.6	-20.0	Pure.
251	Warranted Pure...	Cincinnati Fred Coffman, Terre Haute.	Brasil .....	-16.4	-20.4	Pure.
285	Lamon's	Lamon Gohl Syrup Co.,	Terre Haute ..	-11.8	-14.9	Pure.
317	Scott's Pure Bees Honey.....	Chicago C. M. Scott Co.,	Terre Haute ..	-14.0	-16.1	Pure.
394	York's.....	Indianapolis Geo. W. York, Chicago.....	Martinsville..	-12.4	-18.2	Pure.
1303		H. A. Ross Apiary,	Vincennes...	-17.4	-18.9	Pure.
1343	"Heshmia," War- ranted Pure.....	Evansville J. S. Tisserand, Evansville.	Evansville...	- 9.4	- 9.1	Pure.
1344	J. J. Cooley.....	J. S. Tisserand, Evansville.	Evansville...	-16.0	-17.3	Pure.
1363	Vickery Bro.....	Vickery Bro., Evansville...	Evansville...	-23.2	-24.6	Pure.
1455		John Sunderman, Huntington	Evansville...	-17.4	-18.9	Pure.
1546	Pure White Clover.	Huntington Fred W. Muth Co.,	Huntington..	-12.6	-17.8	Pure.
1559		Cincinnati Overbacker Glucose Co.,	Jeffersonville	-17.0	-19.3	Pure.
1563		Louisville C. A. Weber & Co.,	Jeffersonville	-19.4	-19.8	Pure.
1710		Cincinnati C. B. Tyrrell, Davison, Mich	Jeffersonville	-15.6	-18.2	Pure.
1737	Pure Extracted....	Walter S. Ponder, Indianapolis	Kokomo.....	-10.0	-17.6	Pure.
3152	White Clover.....	Chicago Durand & Kasper, Chicago.	Indianapolis..	-18.6	-21.5	Pure.
3165	None Such.....	McNeill-Higgins, Chicago...	Michig'n City	- 5.8	- 6.3	Pure.
3240	Scott's Pure Bees	C. M. Scott & Co., Indianapolis	Michig'n City	-18.4	-23.5	Pure.
3661		Court House Grocery Co., Indianapolis	Indianapolis..	-13.6	-21.3	Pure.
3692	Scott's Pure.....	C. M. Scott & Co., Indianapolis	Indianapolis..	-11.4	-20.4	Pure.
3967	California Sage		Irvington....	-13.4	-16.5	Pure.
3968	"Basswood," Wis- consin.....		Indianapolis..	-13.8	-19.5	Pure.
3969	"Buckwheat," Michigan.....		Indianapolis..	- 9.8	-13.8	Pure.
			Indianapolis..	-16.2	-19.5	Pure.

## MAPLE SYRUP.

No other articles come to our tables under such false colors as do maple syrup and sugar. The results of the analyses of 54 well known brands indicate that the real maple syrup rarely or never is procurable and that the syrup sold under that name is a product of the cane instead of the sugar maple. The high price which maple syrup commands because of its peculiar flavor has led manufacturers to prepare all sorts of imitation goods, and the great demand, largely in excess of the normal supply, enables them to sell their spurious products at the price of the true article. Cane syrup, made by dissolving cane sugar in water, is colored with caramel, a burnt sugar, and flavored with decoctions of corn cobs, hickory bark or maple chips and sold to the public under the name of "Fancy Vermont Maple Syrup." Several samples

analyzed have contained glucose syrup, one brand containing over 50 per cent. Maple products, although owing their sweetness to sucrose, the same sugar that is produced by sugar cane or the sugar beet, possess a peculiar aromatic odor and delicious flavor, which renders them much more valuable than ordinary cane sugar products. Since it is this characteristic which fixes the price and creates the demand, as well as furnishes a valuable product for the farmer, we insist that all syrup or sugar sold as maple shall be pure. No compounds of cane and maple can be sold unless marked "cane and maple," with the percentage of each ingredient, and all goods sold as "syrup" in packages bearing pictures of maple grocers or sugar houses shall be considered to be intentionally misleading and misbranded.

#### MAPLE SYRUP—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Polarization.		Sucrose.	Glucose.	Ash.	Soluble Alkalinity as $\text{CaO}$ in 10 HCl.	Remarks.
				Direct.	Invert.					
4933	Native Purity	F. N. Johnson, Bellefonte, O.	Indpls....	+59.4	-19.5	59.3	None	.67	5.4	Pure.
4985	Gold Bond....	F. N. Johnson, Bellefonte, O.	Indpls....	+63.2	-20.6	63.0	None	.73	5.0	Pure.
5001	Standard of Ohio.....	Art. E. Crane, Garrettsville, O.	Indpls....	+66.4	-22.0	66.4	None	.64	4.0	Pure.
5168	Maple Forest	Maple Forest Syrup Co., Maple Grove, Vt.	Columbus	+63.6	-18.9	62.0	None	.56	4.0	Pure.
5176	White Label..	Travis & Co., Middlefield, O.	Columbus	+59.8	-19.8	59.8	None	.49	3.2	Pure.
5244	Goddard's Pure.....	Jos. Goddard, Muncie, Ind.	Columbus	+29.8	-13.8	32.8	None	.59	1.6	Low Grade Pure.
6607	.....	.....	Noblesville	+61.8	-22.0	63.4	None	.49	1.8	Pure.
6610	Goddard's Pure.....	Jos. Goddard, Muncie, Ind.	Muncie...	+62.0	-22.0	63.6	None	.58	2.8	Pure.
Laboratory Number.	Brand.	Manufacturer.	Ash.	Alkalinity of Ash in 10 HCl.	Direct Polarization.	Invert Polarization.	Sucrose.	Remarks.		
3450	Ko-We-Ba...	Kothe, Wells & Bauer, Indpls.	.550	8.62	+56.6	-20.9	58.7	A pure maple syrup.		
3438	Maple Forest	Maple Forest Syrup Co., Maple Grove, Vt.	.50	8.80	+39.8	-17.8	43.3	A pure maple syrup.		
4044	Vermont's Finest Quality	Welch Bros. Maple Co., Burlington, Vt.	.60	9.20	+54.0	-22.4	57.4	A pure maple syrup.		
4042	Standard of Ohio.....	Arthur W. Crane, Garrettsville, O.	.55	8.80	+52.6	-21.9	55.7	A pure maple syrup.		

## MAPLE SYRUP—LEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Ash.	Alkalinity of Ash in H Cl. 1%	Direct Polarization.	Invert Polarization.	Sucrose.
4062			Broad Ripple	.55	.....	+56.0	-20.5	57.5
4063			Daleville.....	.72	8.4	+62.2	-23.4	62.9
4067			Carmel.....	.32	11.2	+54.0	-19.3	55.1
4104			Ft. Wayne.....	.....	9.6	+54.4	.....	.....
4120	Made by Farmer.....	Indianapolis.		.71	12.0	+58.6	-20.4	58.9
4121	Made by Farmer.....	Indianapolis.		.52	9.6	+67.8	-20.4	70.2
4124	Made by Farmer.....	Indianapolis.		.64	8.4	+55.0	-20.2	56.8
4128		Columbus.....		.55	7.2	+60.2	-21.3	61.2
4129		Columbus.....		.51	10.8	+64.2	-21.7	64.6
4137	Made by Farmer.....	Indianapolis.		.74	9.6	.....	.....	.....
4157	From Country.....	Indianapolis.		.74	8.0	+60.0	-21.3	61.5
4158	M. Owen & Son, Parkman, Ohio	Indianapolis.		.55	6.8	+62.2	-24.1	63.1
4187		Indianapolis.		.62	10.0	.....	.....	56.4
4194		Indianapolis.		.73	9.2	.....	.....	.....
4195	John Elliott, Fremont, Ind.	Ft. Wayne....		.60	10.4	.....	.....	.....
4204	J. Todd, Bedford, Ind..	Indianapolis.		.67	10.8	+50.6	-19.8	53.0

## MAPLE SYRUP—ILLEGAL.

Laboratory Number	Brand.	Manufacturer.	Ash.	Alkalinity of Ash in H Cl. 1%	Direct Polarization.	Invert Polarization.	Sucrose.	Remarks.
293	New York State, Maple	Arthur Jordan & Co., Indianapolis.	0.114	2.32	+ 59.6	- 22.0	61.0	Largely cane sugar syrup.
1417	Belle Isle .....	E. A. Carboneau & Co.....	.050	.99	+ 61.1	- 18.7	61.0	Largely cane sugar syrup.
130	Maple Forest.	Maple Forest Sap Co., Maple Grove, Vt .....	.146	3.52	+ 59.1	- 21.0	60.6	Largely cane sugar syrup.
146	Champion—Vermont....	Champion Syr. and Refining Co., Indianapolis	.078	1.56	+ 62.6	- 21.4	63.6	Largely cane sugar syrup.
1459	G. & R.....	Grossville & Ra. Co., Chicago .....	.036	.99	+ 59.3	- 21.2	60.9	Largely cane sugar syrup.
175	Oxford County .....	Schnull & Co., Indianapolis	.190	.000	+ 41.2	- 19.8	46.2	Largely cane sugar syrup.
3310	Champion.....	Champion Syr. and Refining Co., Indianapolis	.078	3.05	+ 55.4	- 22.2	58.7	Largely cane sugar syrup.
246	Pure Sap.....	W. D. Huffman Co., Indianapolis	.195	2.32	+ 64.3	- 4.0	51.7	Glucose, 7.2%. Largely cane sugar.
247	Gold Leaf....	Huntington Maple Syr. and Sugar Co., Huntington, Vt.	.175	3.92	+ 0.0	- 20.7	15.6	Peculiar syrup. Largely cane sugar syrup.
353	Absolutely Pure.....	Austin-Nichols Co., New York	.062	2.32	+ 20.7	- 13.8	26.1	Very dilute cane sugar syrup.
3418	Old Manse Canadian Sap	Wm. R. Manierre..	.130	3.92	+ 56.0	- 20.6	58.1	Largely cane sugar syrup.

## MAPLE SYRUP—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Ash.	Alkalinity of Ash in H Cl.	Direct Polarization.	Invert Polarization.	Sucrose.	Remarks.
418	Seal.....	Schnull & Co., Indianapolis	.225	5.88	+ 62.0	- 20.6	62.6	Contains cane sugar.
3649	Ohio.....	Western Reserve Syr. Co., Cleveland, O.	.324	4.00	+ 34.1	- 21.3	40.9	A dilute syrup, containing cane sugar.
1241	Champion....	Ragon Bros., Evansville	.080	3.05	+ 31.8	- 21.2	40.1	A dilute cane sugar syrup.
1259	Maple Grove.	Standard Syr. Co., Cleveland	.050	1.96	+ 55.2	- 21.7	58.2	Largely cane sugar syrup.
3701	Delmonico...	W. D. Huffman & Co., Indianapolis	.300	5.48	+ 80.9	+ 40.3	30.6	Glucose, 28.75%.
1501	Charm.....	Franklin MacVeagh & Co., Chicago	.065	2.74	+ 64.8	- 20.9	64.9	Largely cane sugar syrup.
1621	Vermont.....	Ottenheimer & Son, Louisville	.052	1.96	+ 61.5	- 20.2	61.8	Largely cane sugar syrup.
4033	Pure Quebec.	Williams Bros. & Carbonneau, Detroit	.135	2.32	+ 33.3	- 20.9	41.0	Dilute canesugar mixture.
1637	Our Best .....	Goodwin Preserve Co., Louisville...	.138	3.05	+ 40.5	- 21.3	46.8	Dilute cane sugar mixture.
1062	Kinzee .....	Stevenson & Gross, Chicago	.020	1.56	+ 47.5	- 20.2	51.2	Largely cane sugar syrup.
3183	Royal Blue...	W. J. Quan & Co., Chicago	.136	2.00	+ 55.6	- 20.7	57.8	Largely cane sugar syrup.
3257	Monarch .....	Monarch Maple Syrup Co., Providence, R. I.	.090	1.20	+ 64.4	- 21.6	65.1	Largely cane sugar syrup.
4034	.....	New England Maple Syrup Co., Boston	.080	2.80	+ 59.6	- 20.6	60.7	Largely cane sugar syrup.
294	Green Mountain Sap.....	Burlington Packing Co., Burlington, Vt. ....	.100	2.80	+ 59.8	- 21.7	61.2	Largely cane sugar.
48	Canada Sap..	Scudder Syrup Co., Chicago	.136	2.80	+ 39.8	- 20.6	45.4	Largely cane sugar.
325	Champion....	Champion Syrup Ref. Co., Indianapolis	.054	2.00	+ 59.4	- 21.5	60.8	Largely cane sugar.
326	Fort Henry ..	W. Va. Preserve Co., Wheeling, W. Va.	.120	2.00	+ 74.6	- 14.7	67.1	Glucose, 4.0%. Largely cane sugar.
1742	Canada Sap..	Scudder Syrup Co., Chicago.	.118	2.40	+ 47.7	- 21.1	51.7	Largely cane sugar.
4053	Sugar Grove.	Kenwood Preserve Co., Chicago .....	.200	2.80	+ 131.4	+ 113.8	13.2	Glucose, 67.5%. Largely glucose syrup.
3463	Maple Forest.	Maple Forest Syr. Co., Maple Groves, Vt.	.112	2.40	+ 27.4	- 20.9	36.3	Largely dilute cane sugar syrup.
3609	Log Cabin....	Towle Maple Syrup Co., St. Paul, Minn., and Burlington, Vt. ....	.199	4.80	+ 14.4	- 21.3	56.9	Largely cane sugar syrup.

## MAPLE SYRUP—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Ash.	Alkalinity of Ash to H Cl.	Direct Polarisation.	Invert Polarisation.	Sucrose.	Remarks.
3617	Ohio.....	Western Reserve Syr. Co., Cleveland	.310	4.40	+ 42.4	- 20.4	47.2	Not a pure maple syrup.
3469	Green Mountain Sap....	Burlington Pack. Co., Burlington, Vt.	.164	2.80	+ 64.0	- 21.7	64.4	Largely cane sugar syrup.
3673	Canada Sap..	Scudder Syr. Co., Chicago	.138	2.40	+ 65.2	- 22.8	66.1	Largely cane sugar syrup.
3685	Pure Quebec.	Williams Bros. Co., Detroit, Mich.	.128	2.80	+ 55.2	- 21.1	57.3	Largely cane sugar syrup.
3704	Green Mountain Syrup.	Towle Maple Syrup Co., St. Paul, Minn., and Burlington, Vt.....	.090	1.20	+ 63.2	- 22.0	64.0	Largely cane sugar syrup.
4052	.....	Court House Grocery, Indianapolis	.028	3.20	+ 40.0	- 19.0	44.4	A cane sugar syrup.
3828	Canadian Club.....	Arcadia Maple Co., Importers	.172	2.00	+ 8.0	- 16.2	18.1	A dilute syrup. Largely cane.
3786	Maple Grove.	Standard Syrup Co., Cleveland...	.024	.....	+ 53.2	- 20.9	55.7	A cane sugar syrup.
3836	Maple Grove.	Standard Syrup Co., Cleveland...	.012	2.00	+ 50.8	- 21.7	54.5	A cane sugar syrup.
1043	Western Reserve Ohio Maple Syr.	Western Reserve Syr. Co., Cleveland	.27	4.00	+ 30.4	- 20.9	38.5	Not a pure maple syrup.
1734	Old Manse ....	Wm. R. Manierre..	.16	3.20	+ 51.2	- 20.2	53.6	Largely cane sugar syrup.
3162	Blossom B...	McNeil-Higgins Co., Chicago .....	.12	2.40	+ 52.0	- 20.9	54.8	Largely cane sugar syrup.
1700	Maple Tree ..	Western Reserve Syr. Co., Cleveland	.27	3.6	+ 36.0	- 20.6	41.	Largely cane sugar syrup.
3164	Triumph.....	Poinier Syr. Co., Green Bay, Vt.	.08	3.2	+ 58.0	- 21.1	59.4	Largely cane sugar syrup.
3166	Laurel .....	Walsh, Boyle & Co., Chicago	.15	1.6	+ 57.0	- 22.8	59.3	Largely cane sugar syrup.
3149	Probono.....	Durand & Kasper Chicago	.23	2.8	+ 67.8	- 20.6	66.4	Largely cane sugar syrup.
1416	Belmont .....	Chicago Concentrating Co., Chicago	.06	2.8	+ 58.4	- 21.1	59.7	Largely cane sugar syrup.

## MAPLE SYRUP—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Ash.	Alkalinity of Ash in H Cl.	Direct Polarisation.	Invert Polarisation.	Sucrose.	Remarks.
64	Belmont.	Chicago Concentrating Co., Chicago	Elwood.....	2	.4	+47.6	-22.0	51.1	Cane sugar syrup. Adulterated
79	OldManee	Wm. R. Manierre, Chicago	Alexandria	.32	1.6	+32.2	-23.1	40.7	Cane sugar syrup. Adulterated
365	Mapline..	New Orleans Coffee Co.....	Vincennes	.....	.....	+99.4	+77.8	16.5	No maple present. Glucose 73.7%. Not true to label. Adulterated
4066	.....	.....	Indianap's.	.49	6.4	+61.6	-21.5	62.4	Small amount cane sugar. Adulterated
4123	Ohio Maple Syrup.	.....	South Bend.	.43	6.8	+65.0	-20.4	61.4	Contains cane sugar. Adulterated
4127	.....	.....	Columbus..	.16	2.0	+60.6	-21.3	61.5	Caramel color. Almost wholly cane sugar syrup. Adulterated



MAPLE SYRUP—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Polarization.		Glucose.	Ash.	Total Alkalinity in 10 HCl.	Remarks.
				Direct.	Invert.				
4854	Ohio Maple	L. G. Yoe & Co.	Indianapolis	+58.8	-28.4	58.0	13	1.6	Adulterated.
4861	Champion	Western Reserve Syrup Co., Cleveland.	Indianapolis	+42.4	18.0	45.4	38	3.2	Largely cane sugar.
4867	Old Manse	Cham. Syrup Refining Co., Indianapolis.	Indianapolis	+56.2	-19.1	56.8	16	1.2	Largely cane sugar.
4868	Monarch	Wm. R. Manierre	Indianapolis	+52.2	-19.8	54.1	20	1.4	Largely cane sugar.
4870	Waldorf	Monarch Maple Syrup Co., Providence.	Indianapolis	+58.0	-21.1	59.4	10	0.8	Largely cane sugar.
4875	Ohio	Indianapolis Fancy Grocery Co., Indianapolis.	Indianapolis	+51.6	-19.3	53.3	17	1.0	Largely cane sugar.
4963	Canada Sap	Western Reserve Syrup Co., Cleveland.	Knightstown	+37.4	-18.4	43.5	30	1.2	Largely cane sugar.
4977	Michigan	St. Paul Refining Co., St. Paul	Indianapolis	+41.0	-22.0	47.3	27	2.4	Largely cane sugar.
5081	Northern Woods	Smyrna, Indiana	Indianapolis	+81.8	+28.8	39.8	60	4.6	Adulterated.
5086	Golden Tree	Berry, Maybrun	Indianapolis	+60.2	-20.2	60.4	04	1.6	Largely cane sugar.
5151	Vermont	New England Maple Syrup Co., Boston	Franklin	+66.4	-21.3	65.2	15	1.6	Largely cane sugar.
5152	Maple Grove	Huntingdon Maple Syrup Co., Vermont	Franklin	+67.8	-19.6	65.7	15	3.6	Largely cane sugar.
5156	Vermont	Standard Syrup Co., Cleveland, O.	Franklin	+56.4	-22.0	59.0	01	0.8	Cane sugar syrup.
5169	Souder's	Price & Lucas Co., Louisville.	Columbus	+61.0	-22.0	61.0	17	1.6	Largely cane sugar.
5281	Old Silas	Scudder Syrup Co.	Muncie	+63.8	-22.4	64.8	18	1.6	Largely cane sugar.
5284	Blossom	Wm. Hoyt Co., Chicago	Anderson	+69.4	-22.4	69.0	02	0.8	Largely cane sugar.
5285	Blue Label	David Coleman	Anderson	+80.0	+12.1	51.0	16	1.6	Adulterated.
5318	Westmoreland	McNeil Higgins, Chicago	Covington	+55.4	-20.0	55.8	12	2.0	Largely cane sugar.
5673	Gold Leaf	Scully Syrup Co.	Noblesville	+54.0	-19.3	55.1	11	1.2	Largely cane sugar.
5750	Probono	Huntingdon Maple Syrup Co., Vermont	Kokomo	+48.4	-19.5	50.3	10	1.2	Largely cane sugar.
6079		Durand & Kasper Co., Chicago	Elkhart	+58.8	-22.2	61.3	14	0.6	Largely cane sugar.
6106			North Bend	+66.2	-21.3	63.2	07	0.6	Largely cane sugar.
6406			Noblesville	+62.2	-21.3	63.2	15	0.8	Largely cane sugar.

## MAPLE SUGAR—LEGAL.

Laboratory Number.	Where Collected.	Ash.	Alkalinity of Ash in 10 HCl.
4134	Rockford.....	1.14	16.0
4139	Sanborn.....	.90	9.52
4140	Sanborn.....	.98	9.6

## MOLASSES.

Molasses is made from the juice of cane or other sugar producing plants, and is commonly understood to be the liquid material draining from granulated sugar made from sugar cane, either by natural percolation or by being treated in centrifugal machines. The commercial term, molasses, however, applies to other syrups, including that made from sorghum. The perfection of sugar making processes has increased the amount of cane sugar obtainable from a given quantity of juice and consequently diminished the molasses residue.

With the diminishing of the quantity the quality of the molasses has also depreciated until frequently it is unsuitable for table use. It has become a common custom, for that reason, to add glucose, or corn syrup, to these dark, strong residuums, and thereby produce a lighter colored and more attractive syrup, of finer body and flavor.

While this addition produces an article of increased value from a commercial standpoint, the use of glucose in improving the grade of molasses is considered by all authorities to be an adulteration, and is prohibited by our law, unless goods so blended are properly branded.

## MOLASSES—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Direct Polarisation.	Invert Polarisation.	Sucrose.	Remarks.
122	Fancy Open Kettle.....	New Orleans Coffee Co., New Orleans.	Muncie.....	+40.0	-18.4	48.9	Pure.
288	New Orleans-Dark .....	Natetres Molasses Co., New Orleans.	Terre Haute .....	.....	.....	.....	Burnt- low grade.
1188	.....	American Grocery Co., Louisville...	Princeton..	+38.8	-9.4	37.2	Pure.
1246	G. R. N. O. M. Open Kettle.	Walsh, Boyle & Co. —New Orleans	Mt. Vernon	+23.4	-13.0	26.7	Pure.
1271	.....	.....	Mt. Vernon	+29.2	-13.6	31.1	Pure.
1273	Leoti .....	Botts-Young Molasses Co., New Orleans	Mt. Vernon	+48.4	-5.9	40.8	Pure.
1304	.....	Walsh-Boyle Co., Chicago.	Evansville.	+34.8	-16.7	38.7	Pure.
1670	.....	New Orleans Coffee Co., New Orleans.	Salem .....	+47.2	-18.7	49.5	Pure.
3708	.....	.....	Irvington..	+41.0	-11.2	39.2	Pure.
3283	Plantation Compound..	Champion Syrup Refining Co., Indianapolis	West Indianapolis..	+66.4	+17.1	37.0	Formula 75% N. O.; 25% glucose; labeled correctly.

## MOLASSES—ILLEGAL.

55	Quaker N. O.	Crescent Preserve Co., Indianapolis	Anderson..	+114.4	+40.4	55.6	Glucose 33.6% Adulterated.
342	Fountain ....	Fromhold Bros., Indianapolis.	Vincennes..	+51.6	+14.5	27.9	Glucose 13.5% Adulterated.
390	O. K. ....	Lafourche Plantation.....	Vincennes..	+79.8	+55.4	18.3	Glucose 65% Adulterated.
1651	Last Year, 1904.....	Zinsmeister Bros., New Albany	New Albany	+78.6	+47.0	23.7	Glucose present. Adulterated.
1657	.....	Scheffel & Wheat, Louisville	New Albany	+110.6	+89.5	15.9	Glucose 61% Adulterated.
1694	.....	New Orleans Molasses Co., New Orleans	Salem.....	+119.4	+99.6	13.3	Glucose 47% Adulterated.
1769	.....	New Orleans Coffee Co., New Orleans	Indian'pls..	+46.4	-16.0	46.9	Sulphurous acid present. Adulterated.
3460	.....	.....	Columbus	+99.4	+73.7	19.3	Glucose 45.7% Adulterated.
3677	Dove .....	M. H. Alexander & Co., New Orleans	Irvington..	+73.4	+43.5	22.4	Glucose 36.3% Not true to formula.
3775	Golden Eagle	Delta Packing Co., New Orleans	Indian'pls..	+88.6	+43.1	30.4	Glucose 33.2% Adulterated.
3401	Quaker.....	Crescent Preserve Co., Indianapolis	Columbus..	+137.8	+128.0	7.3	Glucose 74.5% Adulterated.

## SORGHUM MOLASSES.

Sorghum molasses is made by evaporating sorghum juice to the required consistency. Most of the product on the market is made in a small way by concentrating in open pans. None of the sugar is removed because of the difficulty with which it can be freed from the starches and uncrystallizable sugar. Sorghum syrup, because of the presence of large quantities of saccharine matter, is very liable to ferment, and the use of preservatives to check fermentation is not uncommon. We have recently had occasion to examine a sample of sorghum syrup which was preserved with boric acid and beta naphthol, and also contained whiting as a filler. Much glucose is used with sorghum syrup. Some samples examined contained as high as 80 per cent. Six of the 16 samples examined were adulterated.

## SORGHUM MOLASSES—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Direct Polarization.	Invert Polarization.	Sucrose.	Remarks.
1138	.....	C. W. Adams & Co., Louisville	Oakland City .....	+41.4	— 5.7	35.4	Pure.
1209	Country .....	Jos. Colegate, Velpen, Ind.	Princeton..	+26.6	—12.1	29.1	Pure.
1214	.....	Jos. Colegate, Stendal, Ind.	Princeton..	+27.0	—12.3	22.0	Pure.
1240	Cane Juice...	Walsh, Boyle & Co., Chicago	Mt. Vernon.	+23.2	—13.2	27.3	Pure.
1248	.....	G. F. Smock, Mt. Vernon.	Mt. Vernon.	+26.6	— 6.1	24.5	Pure.
1286	.....	Curdsville, Ky.	Evansville.	+19.4	— 9.4	21.6	Pure.
1376	Indiana.....	From Farmer .....	Evansville.	+35.6	—18.0	40.3	Pure.
1481	.....	Boniface, Weber & Allen, Jefferson-	Booneville.	+43.4	—12.9	42.3	Pure.
1572	.....	ville .....	Jefferson-				
		ville .....	ville.....	+41.0	— 7.4	36.4	Pure.
3712	Compound...	Crescent Preserve Co., Indianapolis	Irvington..	+117.2	+60.7	35.1	Glucose, 46.9. True to formula.

## SORGHUM MOLASSES—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Direct Polarisation.	Invert Polarisation.	Sucrose.	Remarks.
1197	.....	Bement & Seitz, Evansville	Princeton ..	+76.4	+44.4	24.0	Glucose, 68%. Adulterated.
1207	Fenesece .....	National Molasses Co., St. Louis ....	Princeton ..	+142.0	+135.0	0.52	Glucose, 80%. A glucose syrup.
1232	95% Pure, Diamond Island .....	Bement & Seitz, Evansville	Mt. Vernon.	+73.2	+55.8	13.0	Glucose, 73%. Adulterated.
1333	.....	Bement & Seitz, Evansville	Evansville .	+79.6	+56.5	25.0	Glucose, 60%. Adulterated.
3695	Our Pride ....	Davenport Refin- ing Co., Daven- port, Ia. ....	Irvington ..	+121.2	+115.8	11.5	Glucose, 62.7. Not true to formula.
341	Fountain ....	Fromhold Bros., Indianapolis	Vincennes .	+128.2	+125.4	2.1	Glucose, 72%. Adulterated.

TABLE SYRUP—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Polarisation.		Sucrose.	Glucose.	Ash.	Total Alkalinity in 10 HCl	Remarks.
				Direct.	Invert.					
4939	Gold Leaf.....	Huntington Map. Syr. Co., Providence, R. I..	Knightstown.	+ 65.6	- 16.9	61.1	.....	10	1.2	Not sold for maple.
5364	Western Reserve..	Western Reserve Syr. Co., Cleveland.....	Covington..	+ 37.0	- 18.0	40.7	.....	28	1.6	Not sold for maple.
5874	Vermont.....	Maple Syr. & Sug. Co., Providence, R. I.....	Ft. Wayne..	+ 65.0	- 16.7	60.5	.....	13	1.6	Not properly labeled.
6893	Golden Tree.....	New Eng. Maple Syr. Co., Boston.....	Ft. Wayne..	+ 62.8	- 19.5	68.1	.....	06	1.6	Not properly labeled.
137	Breakfast Syrup...	Schnull & Co., Indianapolis.....	Brazil.....	+ 141.6	+ 132.0	7.2	76.8	.....	.....	Glucose, 76.8. Pure.
143	Buffalo.....	Hulman & Co., Terre Haute.....	Brazil.....	+ 53.6	- 12.1	49.4	.....	.....	.....	Pure.
3717	Black Wing.....	J. C. Perry & Co., Indianapolis.....	Irvington...	+ 81.0	- 17.0	36.0	.....	.....	.....	Pure.

TABLE SYRUP—ILLEGAL.

5886	.....	A. H. Perfect Co., Ft. Wayne ..	Ft. Wayne ..	+ 158.4	+ 153.5	37	88.4	.....	.....	Sulphurous acid 346.
5926	Imperial .....	F. P. Wilt Co., Ft. Wayne ..	Ft. Wayne ..	+ 70.4	- 11.4	61.9	4.8	.....	.....	Sulphurous acid .011.

**MEAT PRODUCTS, STEAKS, SAUSAGES, PRESSED MEATS, ETC.**

Considerable work has been done in investigating the quality of the fresh prepared meats sold on our markets. Samples sent in by our inspectors from different cities show a decided difference in composition so far as the use of preservatives is concerned. The dealers of certain cities evidently have relied entirely upon borax, and in other places they have used sulfites as preservatives. Collections of meat from the Indianapolis city markets showed an almost universal use of sodium sulfite in chopped meat.

Of twenty-one samples of Hamburger steak, which is prepared by mincing scraps of beef, eighteen contained sulfites, which, calculated as sodium sulfite, the salt usually used, ranged in amount from .015 per cent. to .501 per cent.

The sulfites are used for two reasons; they are preservatives and they act as colorants by preserving the color of the blood corpuscles by forming oxyhaemoglobin, which is of a bright red color. They are the most dangerous of all the preservatives used in food products, not only because of their physiological action on the individual, but because they possess the property of masking the odor and appearance of decay so that putrefaction, usually intelligible to the senses, is not noticed until the meat is in an advanced stage of decomposition. Sulfurous acid, or sulfites, produce a marked toxic effect on the individual, even in doses as small as are employed in preparing meats, and even when their inhibition is not attended by apparent ill effect, it is probable that they may produce kidney lesions of a serious character. Their use is absolutely prohibited by the German government and by the new national food laws of this country.

The claim by the users of these preservatives that it is impossible to do without them and that their abandonment would injure business is a specious argument, and endangers the public health. The use of proper precaution in handling meats, coupled with a realization that meat so aged that its odor and evidences of decay must be masked to appear presentable is not fit food for human consumption, will make it possible for the public to obtain wholesome provisions.

It is probable that many dealers who resort to the use of preservatives do so under the impression that they are not injurious

to health. This belief is fostered by the fact that they see no ill effects following their use in their customers (a fact, however, which a physiologist and post mortem can alone determine), and the extravagant claims for healthfulness advanced by the manufacturers of these vicious products.

As the result of the revelations at the city market legal proceedings were instituted against 30 of the dealers selling goods containing sodium sulfite, and by agreement of counsel for the county and the defendant, one case only was tried. The results of this trial, which extended over a week and which was bitterly fought by the defendant with the assistance of Chicago lawyers and the president of the company manufacturing the preservative used, was that the jury disagreed. The outcome of the case, however, was that of a victory for the State, since by the advice of their counsel the dealers in meats throughout the city abandoned at once the use of sulfites or other illegal meat preservatives. Later examinations of meats sold throughout the city show invariably the absence of sulfites. For a time much complaint was heard that meats could not be kept without them, but as the dealers became accustomed to the handling of their meats they found that they had no difficulty in keeping them fresh and attractive even when no chemical preservatives were employed.

Preservatives, whether they be called Preservaline, Antisour, or by any other name, are illegal. The only preservative agents permissible in the curing of meats are salt, saltpeter, wood smoke, vinegar, sugar and spices.

## SAUSAGES—LEGAL.

Laboratory Number.	Manufacturer.	Where Collected.	Preservatives.
4462	Kingan & Co .....	Indianapolis .....	Absent.
4465	William Grund .....	Indianapolis .....	Absent.
4498	Sindlinger & Co .....	Indianapolis .....	Absent.
4503	Meier & Meuser .....	Indianapolis .....	Absent.
4446	D. T. Buser .....	Indianapolis .....	Absent.
4492	Louis Schwab .....	Indianapolis .....	Absent.
4494	People's Provision Co .....	Indianapolis .....	Absent.
4559	E. F. Overman .....	Indianapolis .....	Absent.
4561	Paul Brandlein .....	Indianapolis .....	Absent.
4562	E. Fleckhammer .....	Indianapolis .....	Absent.
4565	Joe Schott .....	Indianapolis .....	Absent.
4566	Elliott Dressed Beef Co .....	Indianapolis .....	Absent.
4569	Joe Cook .....	Indianapolis .....	Absent.
4571	Charles Mock .....	Indianapolis .....	Absent.
4573	A. Stuckmeyer .....	Indianapolis .....	Absent.



## SAUSAGE—LEGAL—Continued.

Laboratory Number.	Manufacturer.	Where Collected.	Preservatives.
4575	F. Filz .....	Indianapolis .....	Absent.
4580	Kingan .....	Noblesville .....	Absent.
4604	Kolla Hippie .....	Indianapolis .....	Absent.
4646	Frank Strodis .....	Ft. Wayne .....	Absent.
4649	Liekau Packing Co. ....	Ft. Wayne .....	Absent.
4672	Eckart Packing Co. ....	Ft. Wayne .....	Absent.
4673	Cherry Street Market ..	Ft. Wayne .....	Absent.
4674	A. Haller .....	Ft. Wayne .....	Absent.
4675	Grice Meat Market .....	Ft. Wayne .....	Absent.
4679	Eckart Packing Co. ....	Ft. Wayne .....	Absent.
4735	S. Davis .....	Indianapolis .....	Absent.
4739	Louis Schwab .....	Indianapolis .....	Absent.
4754	L. J. Unversaw .....	Indianapolis .....	Absent.
4777	Kukner & Sons .....	Muncie .....	Absent.
4782	Topp & Moore .....	Muncie .....	Absent.
4783	O. M. Stewart .....	Muncie .....	Absent.
4785	L. J. Unversaw .....	Indianapolis .....	Absent.
4789	L. J. Unversaw .....	Indianapolis .....	Absent.
4791	F. Schussler .....	Indianapolis .....	Absent.
4793	Kingan & Co. ....	Indianapolis .....	Absent.
4795	H. C. Maas .....	Indianapolis .....	Absent.
4806	Indianapolis Abattoir ..	Indianapolis .....	Absent.
4821	Albert Worm .....	Indianapolis .....	Absent.
4588	Acme Grocery Co. ....	Indianapolis .....	Absent.
6052	Central Meat Market ..	Crawfordsville .....	Absent.
6107	Burnett Butcher Shop ..	South Bend .....	Absent.
6134	C. W. Grim .....	South Bend .....	Absent.
6319	Kinzie Meat Market .....	South Bend .....	Absent.

## SAUSAGE—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Borax.
124	Frankfurt .....	O. M. Stewart, Muncie ..	Muncie .....	Present.
149	Knoblock .....	Hammond & Co., Chicago ..	Brasil .....	Present.
171	Wienies .....	Jones & Co. ....	Brasil .....	Present.
182	Wienies .....	Halburg, Terre Haute ..	Terre Haute .....	Present.
230	Pork .....	R. B. Hauty, Terre Haute ..	Terre Haute .....	Present.
239	Wienies .....	John Halburg, Terre Haute ..	Terre Haute .....	Present.
251	Wienies .....	Fred Herman, Terre Haute ..	Terre Haute .....	Present.
254	Wienier .....	F. A. Brown, Terre Haute ..	Terre Haute .....	Present.
258	Conies .....	F. A. Brown, Terre Haute ..	Terre Haute .....	Present.
259	Polish .....	Geo. Schidel, Terre Haute ..	Terre Haute .....	Present.
263	Garlic .....	Geo. Schidel, Terre Haute ..	Terre Haute .....	Present.
266	Garlic .....	C. W. Korn, Terre Haute ..	Terre Haute .....	Present.
329	Wienies .....	Kingan & Co., Indianapolis ..	Terre Haute .....	Present.
333	Wienies .....	Wm. Herman, Terre Haute ..	Terre Haute .....	Present.
334	Conies .....	Wm. Herman, Terre Haute ..	Terre Haute .....	Present.
397	Frankfurts .....	Kingan & Co., Indianapolis ..	Vincennes .....	Present.
407	Frankfurts .....	Hammond & Co., Chicago ..	Vincennes .....	Present.
426	Frankfurts .....	G. J. Stumpp, Washington ..	Washington .....	Present.
457	Pork .....	C. J. Bernes, Washington ..	Washington .....	Present.
459	Pork .....	C. J. Bernes, Washington ..	Washington .....	Present.
471	Frankfurts .....	G. H. Hammond Co., Chicago ..	Washington .....	Present.
1139	Pork .....	Swift & Co., Chicago ..	Oakland City .....	Present.
1151	Pork .....	W. H. Lowery .....	Oakland City .....	Present.
1152	Wienies .....	Hammond Co., Chicago ..	Oakland City .....	Present.
1153	Wienies .....	Swift & Co., Chicago ..	Oakland City .....	Present.
1335	Wienies .....	Evansville Packing Co., Evansville ..	Evansville .....	Present.
1336	Pork .....	Evansville Pork Co., Evansville ..	Evansville .....	Present.
1380	.....	Indianapolis Abattoir Co., Indianapolis ..	Indianapolis .....	Present.
1383	Majestic Breakfast ..	Schwarzchild & Sulzberger, Kans. City ..	Indianapolis .....	Present.
1460	Frankfurter .....	Swift & Co., Chicago ..	Huntington .....	Present.
1512	Pork .....	Wm. Kaucher, Huntingburg ..	Huntingburg .....	Present.

## SAUSAGE—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Borax.
1514	Wienies.....	Wm. Rauscher, Huntingburg.....	Huntingburg.....	Present.
1552	Wienies.....	Louis P. Bornwasser, Louisville....	Jeffersonville.....	Present.
1553	Pork.....	Louis P. Bornwasser, Louisville....	Jeffersonville.....	Present.
1554	Garlic.....	Louis P. Bornwasser, Louisville....	Jeffersonville.....	Present.
1800	.....	Kingan & Co., Indianapolis.....	Irvington.....	Present.
3176	Wienies.....	Fred Kurtzman, Hammond.....	Hammond.....	Present.
3177	Garlic.....	Fred Kurtzman, Hammond.....	Hammond.....	Present.
3180	Pork.....	Fred Kurtzman, Hammond.....	Hammond.....	Present.
3187	Pork.....	Hammond Packing Co., Hammond....	Hammond.....	Present.
3188	Wienies.....	Armour & Co., Chicago.....	Hammond.....	Present.
3189	Polish.....	Armour & Co., Chicago.....	Hammond.....	Present.
3190	Tongue.....	Armour & Co., Chicago.....	Hammond.....	Present.
3245	Pork.....	Albert Worm, Indianapolis.....	Indianapolis.....	Present.
3256	Pork.....	Albert Worm, Indianapolis.....	Indianapolis.....	Present.
3816	.....	Gibson Meat Market.....	Indianapolis.....	Present.
3819	Shamrock.....	Kingan & Co., Indianapolis.....	Irvington.....	Present.
3820	Wienies.....	Kingan & Co., Indianapolis.....	Irvington.....	Present.
3938	Wienies.....	Bonwayton, Louisville.....	Jeffersonville.....	Present.
3939	Wienies.....	Bonwayton, Louisville.....	Jeffersonville.....	Present.
154	Bologna.....	Hammond & Co., Chicago.....	Brazil.....	Present.
172	Bologna.....	Jones & Co., Brazil.....	Brazil.....	Present.
250	Bologna.....	Fred Herman, Terre Haute.....	Terre Haute.....	Present.
257	Bologna.....	F. A. Brown, Terre Haute.....	Terre Haute.....	Present.
262	Bologna.....	Geo. Schidel, Terre Haute.....	Terre Haute.....	Present.
267	Bologna.....	C. W. Kern, Terre Haute.....	Terre Haute.....	Present.
330	Bologna.....	Clum Nagle, Terre Haute.....	Terre Haute.....	Present.
356	Ham.....	John B. Zuber, Vincennes.....	Vincennes.....	Present.
427	Bologna.....	C. J. Stumpp, Washington.....	Washington.....	Present.
458	Bologna.....	C. J. Bernes, Washington.....	Washington.....	Present.
1154	Bologna.....	Armour & Co., Chicago.....	Oakland City.....	Present.
1334	Bologna.....	Evansville Packing Co., Evansville....	Evansville.....	Present.
1513	Bologna.....	Wm. Rauscher, Huntingburg.....	Huntingburg.....	Present.
3268	Ham.....	Schwarzchild & Sulzberger, New York.	Indianapolis.....	Present.
189	Liverwort.....	Duffer, Terre Haute.....	Terre Haute.....	Present.
249	Liverwort.....	Fred Herman, Terre Haute.....	Terre Haute.....	Present.
255	Liverwort.....	Armour & Co., Chicago.....	Terre Haute.....	Present.

## SAUSAGE ILLEGAL.

Laboratory Number.	Manufacturer.	Where Collected.	Borax.	Sodium Sulfit.
4486	Sam Davis.....	Indianapolis.....	Present.	Absent.
4489	J. Deschler.....	Indianapolis.....	Absent.	.121 per cent. present.
4471	Hilgemeier & Bro.....	Indianapolis.....	Absent.	.108 per cent. present.
4473	Steinmetz Bros.....	Indianapolis.....	Absent.	.235 per cent. present.
4474	Harry Matzke.....	Indianapolis.....	Absent.	.090 per cent. present.
4481	H. W. Heckman.....	Indianapolis.....	Absent.	.160 per cent. present.
4499	Geo. Woessner.....	Indianapolis.....	Absent.	.258 per cent. present.
4490	Chas. Wechsler.....	Indianapolis.....	Absent.	.188 per cent. present.
4495	Meier & Meuser Pk. Co.....	Indianapolis.....	Absent.	.063 per cent. present.
4504	Meier & Meuser Pk. Co.....	Indianapolis.....	Absent.	.045 per cent. present.
4542	L. Nageleisen.....	Indianapolis.....	Absent.	.240 per cent. present.
4544	Henry Coleman.....	Indianapolis.....	Absent.	.076 per cent. present.
4552	Chas. Cherdron.....	Indianapolis.....	Absent.	.075 per cent. present.
4556	Sindlinger & Co.....	Indianapolis.....	Absent.	.312 per cent. present.
4644	H. G. Wigemann.....	Fort Wayne.....	Present.	Absent.
4645	Eckart Packing Co.....	Fort Wayne.....	Present.	Absent.

## SAUSAGE—ILLEGAL—Continued.

Laboratory Number.	Manufacturer.	Where Collected.	Borax.	Sodium Sulphate.
4656	John Melber .....	South Bend .....	Present .....	Absent.
4657	J. P. Cahill .....	South Bend .....	Present .....	Absent.
4658	M. Bain .....	South Bend .....	Present .....	Absent.
4659	L. Taberski .....	South Bend .....	Present .....	Absent.
4660	J. Lake .....	South Bend .....	Present .....	Absent.
4670	Hallers .....	Ft. Wayne .....	Present .....	Absent.
4776	Eckart Packing Co .....	Ft. Wayne .....	Present .....	Absent.
4798	Fred Jans .....	Indianapolis .....	210 per cent. present..	Absent.
4808	Albert Worms .....	Indianapolis .....	2978 per cent. present.	Absent.
4820	Albert Worms .....	Indianapolis .....	1017 per cent. present.	Absent.
4846	Albert Worms .....	Indianapolis .....	Present .....	Absent.
4582	.....	Noblesville .....	Absent .....	Present.
5821	Eckart Packing Co .....	Ft. Wayne .....	Present .....	Absent.

## HAMBURGER STEAK—LEGAL.

Laboratory Number.	Manufacturer.	Where Collected.	Borax.	Sodium Sulphate.
4479	Paul Brandlein .....	Indianapolis .....	Absent...	Absent.
4481	W. Simon .....	Indianapolis .....	Absent...	Absent.
4486	Elliott Dressed Beef Co .....	Indianapolis .....	Absent...	Absent.
4558	E. F. Overman .....	Indianapolis .....	Absent...	Absent.
4560	Paul Brandlein .....	Indianapolis .....	Absent...	Absent.
4563	F. A. Winterdorfer .....	Indianapolis .....	Absent...	Absent.
4564	Joe Schott .....	Indianapolis .....	Absent...	Absent.
4567	Fred Wuster .....	Indianapolis .....	Absent...	Absent.
4568	Joe Cook .....	Indianapolis .....	Absent...	Absent.
4570	W. Simon .....	Indianapolis .....	Absent...	Absent.
4572	Chas. Mock .....	Indianapolis .....	Absent...	Absent.
4574	F. Filz .....	Indianapolis .....	Absent...	Absent.
4577	F. E. Vickard .....	Indianapolis .....	Absent...	Absent.
4578	Meier-Meuser Packing Co .....	Indianapolis .....	Absent...	Absent.
4642	J. P. Mollett .....	Ft. Wayne .....	Absent...	Absent.
4643	J. N. Linn .....	Ft. Wayne .....	Absent...	Absent.
4645	S. Hanna General Store .....	Ft. Wayne .....	Absent...	Absent.
4725	F. Filz .....	Indianapolis .....	Absent...	Absent.
4728	A. Stuckmeyer .....	Indianapolis .....	Absent...	Absent.
4729	Simon (City Market) .....	Indianapolis .....	Absent...	Absent.
4732	Wm. Grund .....	Indianapolis .....	Absent...	Absent.
4733	Elliott Dressed Beef Co .....	Indianapolis .....	Absent...	Absent.
4734	S. Davis .....	Indianapolis .....	Absent...	Absent.
4741	Meier-Meuser Packing Co .....	Indianapolis .....	Absent...	Absent.
4744	Sindlinger Fresh Meat Co .....	Indianapolis .....	Absent...	Absent.
4750	H. H. Merkin .....	Indianapolis .....	Absent...	Absent.
4753	A. Cherdron .....	Indianapolis .....	Absent...	Absent.
4760	Theo. Deitz .....	Indianapolis .....	Absent...	Absent.
4819	Albert Worm .....	Indianapolis .....	Absent...	Absent.

**HAMBURGER STEAK—ILLEGAL.**

Laboratory Number.	Manufacturer.	Where Collected.	Borax.	Sodium Sulfito.
4452	A Stuckmeyer .....	Indianapolis.....	Absent..	.178 per cent. present.
4456	F. Filz .....	Indianapolis.....	Absent..	.147 per cent. present.
4458	F. W. Hebble .....	Indianapolis.....	Absent..	.164 per cent. present.
4463	Wm. Grund .....	Indianapolis.....	Absent..	.429 per cent. present.
4467	Sam Davis .....	Indianapolis.....	Absent..	.226 per cent. present.
4472	Steinmetz Bros. ....	Indianapolis.....	Absent..	.482 per cent. present.
4475	Harry Matzke .....	Indianapolis.....	Absent..	.260 per cent. present.
4477	Theo. Dietz .....	Indianapolis.....	Absent..	.101 per cent. present.
4480	Chas. Mock .....	Indianapolis.....	Absent..	.131 per cent. present.
4482	Joe Cook .....	Indianapolis.....	Absent..	.298 per cent. present.
4485	W. H. Heckman .....	Indianapolis.....	Absent..	.501 per cent. present.
4487	Fred Wuster .....	Indianapolis.....	Absent..	.026 per cent. present.
4488	Geo. Woessner .....	Indianapolis.....	Absent..	.170 per cent. present.
4491	Thos. Castor .....	Indianapolis.....	Absent..	.144 per cent. present.
4493	A. L. Heckman .....	Indianapolis.....	Absent..	.014 per cent. present.
4500	E. F. Overman .....	Indianapolis.....	Absent..	.030 per cent. present.
4501	Henry Coleman.....	Indianapolis.....	Absent..	.319 per cent. present.
4502	J. G. Schisla .....	Indianapolis.....	Present.	.015 per cent. present.
4541	L. Negeleison .....	Indianapolis.....	Absent..	.141 per cent. present.
4543	Henry Coleman.....	Indianapolis.....	Absent..	.054 per cent. present.
4545	Jos. Parent .....	Indianapolis.....	Absent..	.083 per cent. present.
4546	Steinmetz Bros. ....	Indianapolis.....	Absent..	.068 per cent. present.
4550	Joe Fischer .....	Indianapolis.....	Absent..	.039 per cent. present.
4551	Chas. Cherdron .....	Indianapolis.....	Absent..	.201 per cent. present.
4553	Wm. Grund .....	Indianapolis.....	Absent..	.430 per cent. present.
4555	Sindlinger Fr. Mt. Co .....	Indianapolis.....	Absent..	.402 per cent. present.
4650	H. Reinewald .....	Ft. Wayne .....	Absent..	.260 per cent. present.
4651	E. H. Quillen .....	South Bend .....	Present.	.360 per cent. present.
4652	G. D. Hinzey .....	South Bend .....	Present.	.220 per cent. present.
4653	James Lake .....	South Bend .....	Present.	.140 per cent. present.
4654	John Wesolowski.....	South Bend .....	Present.	.220 per cent. present.
4655	Wolf Brazy .....	South Bend .....	Present.	.110 per cent. present.
4778	Hoffer Bros .....	Muncie .....	Absent..	.138 per cent. present.
4779	Peter Hirschanner .....	Muncie .....	Absent..	.046 per cent. present.
4780	P. W. Goble .....	Muncie .....	Absent..	.074 per cent. present.
4781	S. J. Benzenbower .....	Muncie .....	Absent..	.211 per cent. present.
4761	Albert Worm (Weinies) .....	Indianapolis.....	Present.	Absent.
4775	Eckart Pk.Co.(Frankfurters)	Ft. Wayne .....	Present.	Absent.
5047	Geo. Keller (Frankfurters) .....	Crawfordsville.....	Absent..	.1596 per cent. present.

**FRESH MEATS—LEGAL.**

4836	Jopp & Moore.....	Muncie .....	Absent..	Absent.
4839	Ruskner & Sons .....	Muncie .....	Absent..	Absent.
4841	Dan Gorman .....	Muncie .....	Absent..	Absent.

**MISCELLANEOUS MEATS—LEGAL.**

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Preservatives.
4731	Holstiner .....	Kingan & Co. ....	Indianapolis .....	Absent.
4759	Tripe .....	Indianapolis Abattoir. ....	Indianapolis .....	Absent.
4756	Liverwurst .....	F. Hilgemier .....	Indianapolis .....	Absent.
4730	Metwurst .....	Kingan & Co. ....	Indianapolis .....	Absent.
4752	Metwurst .....	Kingan & Co. ....	Indianapolis .....	Absent.
4746	Liver Pudding .....	Sindlinger Co. ....	Indianapolis .....	Absent.
4743	Blood Pudding .....	Meier-Mueser Packing Co. ....	Indianapolis .....	Absent.
4748	Blood Pudding .....	Frank A. Uhl .....	Indianapolis .....	Absent.
5920	Smoked Ham .....	Ft. Wayne Grocery Co. ....	Ft. Wayne .....	Absent.

## MISCELLANEOUS MEATS—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Borax.	Sodium Sulphate.
4834	Fresh Meat.	Bill Thomas .....	Muncie .....	Absent.	.047 per cent. present.
4835	Fresh Meat.	J. S. McDonald .....	Muncie .....	Absent.	.038 per cent. present.
4837	Fresh Meat.	Benzenlower .....	Muncie .....	Absent.	.065 per cent. present.
4838	Fresh Meat.	O. M. Stewart .....	Muncie .....	Absent.	.085 per cent. present.
4840	Fresh Meat.	Dan Gorman .....	Muncie .....	Absent.	.448 per cent. present.
4447	Minced Ham.	J. Frederick .....	Ft. Wayne .....	Present.	Absent.
4808	Pressed Ham.	Albert Worm .....	Indianapolis .....	.1302% .....	Absent.
4817	Boiled Ham.	Indianapolis Abattoir .....	Indianapolis .....	Present.	Absent.
4903	Bologna .....	.....	Noblesville .....	Excess .....	Absent.
5922	Pressed Ham.	Eckart Packing Co. ....	Ft. Wayne .....	Present.	Absent.
5044	Frankfurter.	Geo. Keller .....	Crawfordsville .....	Present.	Absent.
5049	Frankfurter.	Shaw & Thompson .....	Crawfordsville .....	Present.	Absent.

## FRANKFURTERS—LEGAL.

Laboratory Number.	Manufacturer.	Where Collected.	Preservatives.
4736	Meier-Meuser Packing Co .....	Indianapolis .....	Absent.
4740	Meier-Meuser Packing Co .....	Indianapolis .....	Absent.
4751	H. Merklin .....	Indianapolis .....	Absent.
4771	Eckart Packing Co. ....	Indianapolis .....	Absent.
5045	Armour & Co., Chicago. ....	Crawfordsville. ....	Absent.
5046	Swift & Co., Chicago .....	Crawfordsville .....	Absent.

## HAM LOAF—LEGAL.

Laboratory Number.	Manufacturer.	Where Collected.	Preservatives.
4671	Eckart Packing Co. ....	Ft. Wayne .....	Absent.
4737	Nelson Morris Co. ....	Indianapolis .....	Absent.
4773	Eckart Packing Co. ....	Ft. Wayne .....	Absent.
4774	Eckart Packing Co. ....	Ft. Wayne .....	Absent.
4784	Kingan & Co. ....	Indianapolis .....	Absent.
4810	Kingan & Co. ....	Indianapolis .....	Absent.
4819	Kingan & Co. ....	Indianapolis .....	Absent.
4814	Coffin-Fletcher .....	Indianapolis .....	Absent.
4816	Swift & Co., Chicago .....	Indianapolis .....	Absent.
4818	Kingan & Co. ....	Indianapolis .....	Absent.

## VEAL—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Preservatives.
4842	Veal Ham .....	Meier-Meuser Co. ....	Indianapolis .....	Absent.
4576	Veal Loaf .....	F. W. Hebble .....	Indianapolis .....	Absent.
4727	Veal Loaf .....	F. W. Hebble .....	Indianapolis .....	Absent.
4757	Veal Loaf .....	Harry Matzke .....	Indianapolis .....	Absent.
4813	Veal Loaf .....	Dausch & Williams .....	Indianapolis .....	Absent.

## BOLOGNA—LEGAL.

Laboratory Number.	Manufacturer.	Where Collected.	Preservatives.
4726	F. Filz .....	Indianapolis ..	Absent.
4738	Meier-Meuser Packing Co. ....	Indianapolis ..	Absent.
4745	Sindlinger Fresh Meat Co. ....	Indianapolis ..	Absent.
4749	F. Uhl .....	Indianapolis ..	Absent.
4758	P. Brandlein .....	Indianapolis ..	Absent.
4772	Eckart Packing Co. ....	Ft. Wayne ..	Absent.
4786	Meier-Meuser Packing Co. ....	Indianapolis ..	Absent.
4788	Meier-Meuser Packing Co. ....	Indianapolis ..	Absent.
4790	Coffin-Fletcher Co. ....	Indianapolis ..	Absent.
4792	Geo. Derleth .....	Indianapolis ..	Absent.
4797	Meier-Meuser Co. ....	Indianapolis ..	Absent.
4799	A. Janert .....	Indianapolis ..	Absent.
4801	Bills & Boettcher .....	Indianapolis ..	Absent.
4802	Coffin-Fletcher Co. ....	Indianapolis ..	Absent.
4803	Kingan & Co. ....	Indianapolis ..	Absent.
4805	Kingan & Co. ....	Indianapolis ..	Absent.
4815	Coffin-Fletcher Co. ....	Indianapolis ..	Absent.
4822	Indianapolis Abattoir .....	Indianapolis ..	Absent.
5050	Shaw & Thompson .....	Crawfordsville ..	Absent.
5051	Swift & Co., Chicago .....	Crawfordsville ..	Absent.

## WEINER SAUSAGE—LEGAL.

4747	Sindlinger Fresh Meat Co. ....	Indianapolis ..	Absent.
4755	Geo. Derleth .....	Indianapolis ..	Absent.
4787	Meier-Meuser Packing Co. ....	Indianapolis ..	Absent.
4794	Sam T. Brown .....	Indianapolis ..	Absent.
4794	Albert Janert .....	Indianapolis ..	Absent.
4800	Wm. Toll .....	Indianapolis ..	Absent.
4807	Kingan & Co. ....	Indianapolis ..	Absent.
4811	Kingan & Co. ....	Indianapolis ..	Absent.
4812	Indianapolis Abattoir .....	Indianapolis ..	Absent.

## MISCELLANEOUS MEATS—LEGAL.

Laboratory Number.	Article.	Manufacturer.	Borax.	Sodium Sulphate.
4459	Dried Beef. ....	N. E. Specialty Co., Cleveland, O	Absent.	Absent.
4468	Dried Beef. ....	Nelson Morris & Co., Chicago ..	Absent.	Absent.
4461	Ham Loaf. ....	Armours, Chicago ..	Absent.	Absent.
4497	Ham Loaf. ....	Armours, Chicago ..	Absent.	Absent.
4464	Pigs Foot Jelly. ....	Wm. Grund, Indianapolis ..	Absent.	Absent.
4478	Fresh Tripe .....	Indianapolis Abattoir ..	Absent.	Absent.

## MISCELLANEOUS MEATS—ILLEGAL.

4457	Bologna .....	F. Filz .....	Absent.	.147 per cent. present.
4460	Weinerwurst .....	Albert Worm .....	Present.	Absent.
4470	Weinerwurst .....	Sindlinger Co. ....	Absent.	.025 per cent. present.
4476	Veal Loaf. ....	Harry Matzke .....	Absent.	.153 per cent. present.
4488	Veal Loaf. ....	Joe Cook .....	Absent.	.279 per cent. present.
4496	Frankfurter .....	Meier-Meuser Packing Co. ....	Absent.	.050 per cent. present.

## MEAT PRODUCTS, CANNED.

Under this heading we have analyzed 20 samples of miscellaneous articles, nine of which have been pure and 11 adulterated.

## MISCELLANEOUS MEAT PRODUCTS—LEGAL.

## CANNED.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Remarks.
1624	Fresh Lobster, "Crown".....	L. Pickert Fish Co.....	New Albany.	
3567	Ham Loaf.....	Libby, McNeil & Libby, Chicago.	Indianapolis.	
3570	Salmon, "Sea Rose".	Thlinket Packing Co., Portland, Ore.	Indianapolis.	
3576	Hamburger Steak....	Libby's, Chicago.....	Indianapolis.	
3578	Boned Chicken, "Columbia".....	Mullen-Blackledge Co..	Indianapolis.	
3632	Potted Chicken, "Jeddo".....	Court House Grocery Co.	Indianapolis.	
3645	Deviled Tongue, "Lion".....	Fairbank Canning Co....	Indianapolis.	
1523	Selected Shrimp.....	Thos. R. Levy Co., Cincinnati.	Jeffersonville	
1713	Gold Label Shrimp.	Edw. T. Russell & Co., Boston.	Kokomo.....	

## MISCELLANEOUS MEAT PRODUCTS—ILLEGAL.

## CANNED.

1691	Vienna Sausage, "Red Star".....	Cicero Canning Co., Chicago.	Salem.....	Preserved with Borax.
3566	Deviled Ham.....	.....	Indianapolis.	Preserved with Borax.
3577	Potted Turkey, "Columbia".....	Mullen-Blackledge Co.	Indianapolis.	Preserved with Borax.
3579	Dried Beef, "Wedding Ring".	Bloomington, Ills. ....	Indianapolis.	Preserved with Borax.
3583	Chicken Tamale.....	Libby, McNeil & Libby Co., Chicago.....	Indianapolis.	Preserved with Borax.
3771	Codfish, Shredded...	J. N. Bearely Sons, New York City.	Indianapolis.	Preserved with Borax.
3777	Frankfurters, Bratwurst.....	Gabriel Triet Co., Frankfurt-on-Main.	Indianapolis.	Preserved with Borax.

## LARD AND LARD COMPOUNDS.

Our analyses have shown that much of the lard known as lard or pure leaf lard, contains beef stearine, put in to raise its melting point and thereby stiffen it. Pure lard must be made from the melted fat of the hog and contain no added ingredients; the incorporation of beef stearine or lamb suet constitutes an adulteration. The compounds made from cottonseed oil and beef stearine are wholesome products, but such goods must be sold for what they are and not as lards. Under the operation of the Federal Meat In-

spection Law, the addition of not to exceed 4 per cent. of lard stearine will be allowed. This ruling will be followed in this State.

Of the 42 samples of lard examined during the year, 27 have been passed as pure, while 15, or 35.6 per cent., have been adulterated, either by the addition of cottonseed oil or beef stearine.

## LARD—LEGAL.

Laboratory Number	Brand.	Manufacturer.	Where Collected.	Butyro Re-fract. at 40 C.	Halphen Test.	Remarks.
139	Danville .....	Campbell Bros., Danville, Ill.	Brazil .....	50.0	None.	Pure.
332	Lard .....	Griffin Bros.	Terre Haute .....	50.1	None.	Pure.
316	Leaf Lard .....	C. B. O'Donnell .....	Vincennes .....	50.3	None.	Pure.
399	Lard .....	P. J. Bernes .....	Vincennes .....	49.4	None.	Pure.
1158	Ivory .....	E. Godel & Son, Peoria, Ill.	Oakland City .....	50.0	None.	Pure.
4983	.....	Indianapolis Abattoir .....	Indianapolis .....	51.7	None.	Pure.
4974	.....	Coffin-Fletcher .....	Indianapolis .....	50.9	None.	Pure.
4978	.....	Meier-Meuser Co. ....	Indianapolis .....	51.4	None.	Pure.
4979	.....	Deschler & Co. ....	Indianapolis .....	51.1	None.	Pure.
4980	.....	Wm. Grund .....	Indianapolis .....	48.9	None.	Pure.
4981	.....	Harry Heckman .....	Indianapolis .....	49.9	None.	Pure.
4982	Farmer .....	Chadwick & Co. ....	Indianapolis .....	50.3	None.	Pure.
5670	Kettled Ren'd .....	Kingan & Co. ....	Richmond .....	51.0	None.	Pure.
6041	.....	E. C. Murphy, Goshen.....	Goshen.....	51.2	None.	Pure.

## LARD—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Butyro Re-fract. Read at 40 C.	Halphen Test.	Remarks.
86	Pure Lard....	Dan Kurtz .....	Alexandria ..	51.0	Very Strong..	Largely Cottonseed oil
148	Home Rendered.....	W. B. Jones & Co....	Brazil .....	49.8	Light.....	Small per cent Cottonseed oil
470	Hog Lard ....	H. J. Kramer .....	Washington..	48.6	Light.....	Small per cent Cottonseed oil
3620	Best Kettle Mace.....	Court House Grocery	Indianapolis.	49.2	Medium..	Much Cottonseed oil
3621	Lard.....	Court House Grocery	Indianapolis.	52.2	Medium..	Much Cottonseed oil.
1806	Magnolia Leaf.....	.....	New Albany ..	49.2	Light.....	Small per cent Cottonseed oil
1692	Butchers Lard.....	Zeinmeister Bros....	New Albany ..	49.8	Light.....	Small per cent Cottonseed oil
4973	.....	Hilgemier & Bro.....	Indianapolis.	51.0	Light.....	Cottonseed oil present.
4975	.....	Hilgemier & Bro .....	Indianapolis.	51.8	Light....	Cottonseed oil present.
4976	.....	Hilgemier & Bro.....	Indianapolis.	51.8	Light.....	Cottonseed oil present.
4977	.....	Sindlinger Pro. Co....	Indianapolis.	50.0	Light.....	Cottonseed oil present.
4984	.....	Albert Worm .....	Indianapolis.	53.6	Strong....	Cottonseed oil present.
5919	.....	Eckart Pkg. Co .....	Ft. Wayne ...	49.8	None .....	Stearine present.



## OLIVE OIL.

Olive oil is the expressed oil of the mature fruit of the cultivated olive tree, and must be free from admixtures of other vegetable or animal oils. Until within recent years it has been difficult to purchase pure olive oil, but at present there is little oil imported that is not genuine. Our work shows, however, that many of the oils on the Indiana market are adulterated with cottonseed or peanut oil. Of the 188 samples examined 56, or 29.8 per cent., were adulterated. Many of these adulterated goods were pure cottonseed oil, prepared and bottled in this country under a foreign label, that of "E. Loubon et Cie, Nice," being most commonly used. Many of the druggists' samples of olive oil have been found to be pure cottonseed oil, otherwise known to the drug trade as "sweet oil." One sample marked "Pure Olive Oil," bore the following label: "Those using olive oil should be very careful to discriminate between the medicinal olive oil and the impure sweet oil, which on account of its impurities is only used for external and mechanical uses." And yet the sample was nothing but the sweet oil the customer is cautioned against using.

## OLIVE OIL—LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity.	Butyro Refractometer Reading at 15.50° C.	Hallphen's Test.
103	Isaiah Russell	Muncie	.9168	66.6	Normal.
200	W. W. Kaufman	Terre Haute	.9163	66.8	Normal.
772	A. F. Schmidt	Washington	.9165	67.5	Normal.
787	Il. J. Lindenman	Washington	.9168	66.3	Normal.
379	J. A. Risch	Vincennes	.9170	67.4	Normal.
859	J. F. Bomm	Evansville	.9164	67.8	Normal.
886	H. J. Schlaepfer	Evansville	.9163	67.6	Normal.
915	D. & H. Rosenbaum	Mt. Vernon	.9164	66.5	Normal.
972	Porter & Co.	Peru	.9144	67.7	Normal.
1027	R. G. Clark	Wabash	.9156	66.4	Normal.
1048	Fowler & Kaelin	Huntington	.9166	67.4	Normal.
1073	M. Kaylor	Huntington	.9164	67.2	Normal.
1118	J. C. Hutzell	Ft. Wayne	.9166	67.2	Normal.
1133	A. Deusch & Co.	Oakland City	.9162	67.1	Normal.
1142	C. B. Woodworth & Co.	Ft. Wayne	.9157	66.5	Normal.
1201	Meyer Bros. & Co.	Ft. Wayne	.9158	67.0	Normal.
1219	Pellens & Lewis	Ft. Wayne	.9168	66.6	Normal.
1285	Cook Grocery Co.	Evansville	.9156	66.8	Normal.
1434	Tuttle & Hubble	Huntington	.9161	66.9	Normal.
1440	McCaffrey & Co.	Huntington	.9164	66.9	Normal.
1441	E. Ball	Huntington	.9163	67.0	Normal.
1547	N. A. Moore & Co.	Indianapolis	.9168	67.5	Normal.
1724	Houseworth Bros.	Elkhart	.9168	66.6	Normal.
1901	Leonard & Bentz	Elkhart	.9166	66.6	Normal.
1944	G. W. Rule	Goshen	.9171	66.6	Normal.
2013	J. M. Callender	Laporte	.9163	67.0	Normal.
2065	T. H. Boyd & Co.	Laporte	.9164	67.2	Normal.
2095	Kaplousky & Moran	Michigan City	.9159	67.2	Normal.
2109	E. W. Lindemann	Michigan City	.9161	67.0	Normal.
2163	Summers' Pharmacy	Hammond	.9168	67.0	Normal.

## OLIVE OIL—LEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity.	Butyro Refractometer Reading at 15.50° C.	Halphen's Test.
2222	Busjohn & Schneider.....	Logansport.....	.9162	67.0	Normal.
2273	Red Cross Pharmacy.....	Logansport.....	.9169	67.0	Normal.
2301	M. M. Murphy.....	Delphi.....	.9172	67.2	Normal.
2386	Schultz & Borwell.....	Lafayette.....	.9125	67.0	Normal.
2397	Anderson Drug Co.....	Anderson.....	.9169	67.0	Normal.
2411	J. B. Wehrle.....	Anderson.....	.9168	67.2	Normal.
2478	H. H. Ice.....	Muncie.....	.9161	67.0	Normal.
2488	People's Drug Store.....	Muncie.....	.9165	67.1	Normal.
2512	V. E. Silverburg.....	Muncie.....	.9166	66.8	Normal.
2644	F. L. Saylor.....	Elwood.....	.9170	67.0	Normal.
2661	W. Cogswell.....	Elwood.....	.9171	66.7	Normal.
2698	W. Scott.....	Kokomo.....	.9161	67.0	Normal.
2839	W. M. Birk.....	Indianapolis.....	.9172	67.5	Normal.
2895	H. J. Huder.....	Indianapolis.....	.9176	67.0	Normal.
2926	I. N. Heims.....	Indianapolis.....	.9169	67.1	Normal.
2944	Weber Drug Co.....	Indianapolis.....	.9175	67.0	Normal.
2962	E. H. Wilson.....	Indianapolis.....	.9171	67.0	Normal.
2974	Navin's Pharmacy.....	Indianapolis.....	.9168	67.1	Normal.
3379	J. B. Cook & Son.....	Columbus.....	.9163	66.5	Normal.
3694	Pettis Dry Goods Co.....	Indianapolis.....	.9162	67.5	Normal.
3635	Court House Grocery Co.....	Indianapolis.....	.9154	66.8	Normal.
3702	J. E. Karns.....	Indianapolis.....	.9157	67.0	Normal.
3703	J. E. Karns.....	Indianapolis.....	.9166	67.2	Normal.
3841	Gentry Drug Store.....	Bloomington.....	.9174	67.9	Normal.
3849	Bowles Drug Store.....	Bloomington.....	.9165	67.2	Normal.
3878	William C. Pfau.....	Jeffersonville.....	.9163	67.1	Normal.
3883	Schwaninger Bros.....	Jeffersonville.....	.9165	67.1	Normal.
3891	Charles D. Knoefel.....	New Albany.....	.9149	66.0	Normal.
3907	McDonald-Stockdell Co.....	New Albany.....	.9161	67.0	Normal.
3913	Conner's Drug Store.....	New Albany.....	.9165	66.0	Normal.
3924	Floyd Parks.....	Jeffersonville.....	.9168	67.1	Normal.
3927	Doherty's Drug Store.....	Jeffersonville.....	.9147	67.0	Normal.
3933	Montani Bros.....	Indianapolis.....	.9159	67.0	Normal.
3896	B. Doolittle.....	Jeffersonville.....	.9164	66.9	Normal.

Laboratory Number.	Retailer.	Where Collected.	Butyro Refractometer Reading at 15.50° C.	Halphen's Test.
6008	O. J. Beeson.....	Goshen.....	64.5	None.
6024	H. N. Jenner.....	Goshen.....	64.4	None.
6044	O. J. Beeson.....	Goshen.....	64.2	None.
6063	F. H. Bentz.....	Elkhart.....	64.6	None.
6065	C. D. Walls.....	Elkhart.....	64.2	None.
6070	Houseworth Bros.....	Elkhart.....	64.6	None.
6089	E. J. Finehout.....	Elkhart.....	64.4	None.
6095	Conley Drug Co.....	South Bend.....	61.4	None.
6099	Public Drug Store.....	South Bend.....	64.7	None.
6131	Chapin Park.....	South Bend.....	64.3	None.
6255	F. W. Meissner, Jr.....	La Porte.....	66.4	None.
6315	O. C. Bastian.....	South Bend.....	64.8	None.
6331	E. C. Zahrt.....	La Porte.....	66.4	None.
6367	A. E. Kepert.....	Hammond.....	66.9	None.
6363	E. R. Stanffer.....	Hammond.....	66.0	None.
6379	J. W. Weise.....	Hammond.....	65.9	None.
6384	B. S. Wallick.....	Valparaiso.....	66.2	None.
6397	Heinemann-Sievers.....	Valparaiso.....	66.7	None.
6404	New Land Drug Store.....	Valparaiso.....	65.7	None.
6411	Peoples Drug Co.....	Plymouth.....	66.6	None.
6426	Oak Drug Store.....	Plymouth.....	66.8	None.
6481	R. E. Murphy.....	Peru.....	66.6	None.
6486	Chickasaw Drug Co.....	Peru.....	66.5	None.
6496	Blue Drug Store.....	Peru.....	65.8	None.
6501	M. W. Hamaker.....	Peru.....	66.5	None.
4932	I. Prince.....	Indianapolis.....	62.1	None.
4935	Consumer Grocery Co.....	Indianapolis.....	62.4	None.
4936	Consumer Grocery Co.....	Indianapolis.....	.....	None.
4993	W. A. Schofield.....	Indianapolis.....	62.4	None.
4997	Glick & Shane.....	Indianapolis.....	62.4	None.

## OLIVE OIL—LEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.	Butyro Refractometer Reading at 15.50° C.	Halphen's Test.
5015	H. E. Gaddis .....	Indianapolis .....	62.4	None.
5076	Robt. Keller .....	Indianapolis .....	63.2	None.
5208	Rush County Grocery .....	Rushville .....	62.5	None.
5249	A. B. Flinn .....	Rushville .....	62.4	None.
5241	Ed Gooble & Co. ....	Muncie .....	63.1	None.
5288	J. Bryan & Son .....	Muncie .....	62.1	None.
5312	H. W. Darling .....	Williamsport .....	62.5	None.
5767	Blue Front Drug Store .....	Tipson .....	61.2	None.
5811	Geo. Loesch's Drug Store .....	Ft. Wayne .....	64.2	None.
5852	Christian Bros. Drug Store .....	Ft. Wayne .....	61.1	None.
5855	H. E. Beverford .....	Ft. Wayne .....	61.2	None.
5862	L. J. Zollinger .....	Ft. Wayne .....	64.1	None.
5883	Ed Mertz .....	Ft. Wayne .....	64.3	None.
5908	F. D. Hoham .....	Ft. Wayne .....	64.6	None.
5985	W. W. Jones .....	Greencastle .....	64.3	None.
5988	W. Craig .....	Greencastle .....	61.5	None.
6002	F. Stahlhut .....	Indianapolis .....	.....	None.
6507	Porter the Druggist .....	Peru .....	67.2	None.
6524	City Drug Store .....	Michigan City .....	66.6	None.
6529	E. M. Lindeman .....	Michigan City .....	67.0	None.
6539	E. M. Moran .....	Michigan City .....	66.0	None.
6559	L. H. Mattern .....	Whiting .....	66.6	None.
6578	Otto Negele .....	Hammond .....	66.3	None.

## OLIVE OIL—ILLEGAL.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity.	Butyro Refractometer Reading.	Halphen's Test.	Remarks.
618	G. Reiss .....	Terre Haute .....	.9195	70.2	Medium ..	Contains cottonseed oil.
648	H. J. Werker .....	Vincennes .....	.9196	70.0	Medium ..	Contains cottonseed oil.
666	W. C. Watjen .....	Vincennes .....	.9203	70.2	None .....	Contains peanut oil.
700	C. P. Miller .....	Vincennes .....	.9200	70.2	Trace .....	Contains cottonseed oil.
739	H. G. May .....	Princeton .....	.9191	70.3	Strong .....	Contains cottonseed oil.
759	F. S. Clapp .....	Washington .....	.9204	70.8	Trace .....	Contains cottonseed oil.
811	C. Kightly .....	Oakland City .....	.9162	65.6	None .....	A dark green inferior oil.
819	A. Young .....	Oakland City .....	.9234	73.5	Strong .....	Cottonseed oil.
826	A. G. Troutman .....	Oakland City .....	.9219	71.6	Strong .....	Cottonseed oil.
931	Dawson & Boyce .....	Mt. Vernon .....	.9204	71.2	Medium ..	Contains cottonseed oil.
954	Joe Haney .....	Peru .....	.9187	70.4	Trace .....	Contains cottonseed oil.
999	Chickasaw Pharm'cy .....	Peru .....	.9219	72.9	Strong .....	Cottonseed oil.
1517	Chris Kilens .....	Jeffersonville .....	.9226	72.3	Strong .....	Cottonseed oil.
1846	F. J. Goldman .....	Elkhart .....	.9196	69.5	Strong .....	Contains cottonseed oil.
1928	O. J. Beeson .....	Goshen .....	.9207	70.4	Trace .....	Contains cottonseed oil.
2265	W. H. Porter .....	Logansport .....	.9189	69.6	Strong .....	Contains cottonseed oil.
2325	W. W. Johnson .....	Lafayette .....	.9186	68.5	Light .....	Contains cottonseed oil.
2375	Wells-Yaeger-Best Co .....	Lafayette .....	.9161	67.8	Strong .....	Contains cottonseed oil.
2448	Cassell Bros .....	Anderson .....	.9161	74.8	Strong .....	Cottonseed oil.
2499	E. P. Whitney .....	Muncie .....	.9189	69.1	Moderate ..	Cottonseed oil present.
2572	City Drug Store .....	Alexandria .....	.9109	71.3	Moderate ..	Cottonseed oil.
2545	E. C. Robinson .....	Alexandria .....	.9236	72.9	Moderate ..	Cottonseed oil.
2600	F. C. Jones .....	Alexandria .....	.9216	71.0	Moderate ..	Cottonseed oil.
2607	Stringfellow & Co .....	Elwood .....	.9207	70.5	Slight .....	Contains cottonseed oil.
2778	Moore Bros .....	Tipson .....	.9214	71.5	Medium ..	Contains cottonseed oil.
2801	L. T. Harker .....	Tipson .....	.9221	71.5	Medium ..	Contains cottonseed oil.
2818	H. Mehlis .....	Tipson .....	.9189	68.0	None .....	Very inferior quality.
2840	A. B. Carr .....	Indianapolis .....	.9227	72.2	Moderate ..	Cottonseed oil.
2845	F. H. Carter .....	Indianapolis .....	.9249	71.0	Slight .....	Not a pure olive oil.
2911	E. W. Stuckey .....	Indianapolis .....	.9216	72.0	Strong .....	Cottonseed oil.
3380	J. B. Cook & Son .....	Columbus .....	.9218	72.0	Strong .....	Cottonseed oil.
3489	F. E. Ross .....	Noblesville .....	.9202	70.3	Slight .....	Not a pure oil.
3502	C. L. Mitchell .....	Noblesville .....	.9204	70.3	Slight .....	Not a pure oil.
3540	A. G. Baldwin .....	Noblesville .....	.9225	72.1	Strong .....	Cottonseed oil.
3845	C. O. Maple .....	Bloomington .....	.9232	73.4	Strong .....	Cottonseed oil.
3844	John O'Harrow .....	Bloomington .....	.9156	65.0	None .....	Very inferior oil.
3874	Ed Fenton .....	Noblesville .....	.9225	72.1	Slight .....	Cottonseed oil.

## OLIVE OIL—ILLEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity.	Butyro Refractometer Reading.	Halphen's Test.	Remarks.
921a			.9223	72.6	Moderate	Cottonseed oil.
3281	Court House Grocery	Indianapolis	.9217	72.5	Moderate	Cottonseed oil.
3282	Court House Grocery	Indianapolis	.9228	72.5	Moderate	Cottonseed oil.
2199	E. P. Whinery	Muncie	.918	69.1	Moderate	Cottonseed oil present.
5022	Given-Campbell	Frankfort	.916	67.0	Strong	Cottonseed oil present.
5199	F. B. Johnson	Rushville	.910	61.4	Strong	2C% cottonseed oil present and lard oil.
5201	Ashworth & Stewart	Rushville	.915	66.5	Strong	20% cottonseed oil.
5202	Hargrove & Mullin	Rushville	.917	68.2	Strong	Cottonseed oil present.
5306	C. B. Merritt	Frankfort	.915	66.4	Negative	Not a pure oil.
5970	Badger & Green	Greencastle		69.0	Strong	Almost pure cottonseed oil.
6137	T. S. Kusel	South Bend		68.3	Negative	Not a pure oil.
6158	J. W. Temperly	Madison		72.4	Strong	80% cottonseed oil.
6447	Shore & Wilson	Rochester		69.7	Negative	Not a pure oil.

## PRESERVED FRUITS, JELLIES AND JAMS.

Under this heading is put all products made from fruit and sugar, either cane or glucose, and including fruit butters, fruit preserves, fruit jellies and jams, etc.

The base of the imitation fruit jelly, jam, etc., is apple juice or apple pulp, obtained principally from the waste parings and cores of the apple drying or evaporated apple factory. These waste products are partially dried at the factory, packed in bales or barrels, and shipped to the manufacturer of fruit products at a very low cost. Upon arriving at the factory the stock is boiled for a time in open kettles and then placed in large closed copper kettles and heated by blowing with superheated steam until the clear apple juice drains out of the mass to the bottom of the kettle. It is then drawn off into tanks and serves as stock for making all varieties of jellies and preserved fruits.

For the production of a satisfactory jelly or jam large quantities of sugar are necessary for jellifying and preserving the fruit. The cost of this sugar contributes largely to the cost of manufacture. Cheaper sugars in the form of glucose and glucose syrup are therefore employed as a substitute for cane sugar. Glucose is a wholesome and nutritious article of food, and no objection can be made to its use except that products containing it are sold at prices not warranted by their actual cost. In some cases saccharin, a coal tar product of no food value but of great sweetening power, is used where a very sweet article is desired. Saccharin

has antiseptic properties which make its use profitable. Its influence on the system is not determined and its employment is not allowable.

The apple juice and glucose syrup are mixed in the necessary proportions, colored with a coal tar dye to counterfeit the genuine product; flavored with compound ethers, synthetic fruit ethers, technically known as ethyl butyrate, amyl acetate, etc.; preserved by the addition of benzoate of soda or salicylate of soda, and ultimately placed upon the market as pure currant, raspberry, or strawberry jelly.

Foreign coloring matter is employed in preparing fruit products for two reasons: one is that the color of fruit is not very stable and is liable to be destroyed during the process of preserving, and, furthermore, that goods packed in glass will lose their color when constantly exposed to the light on the grocer's shelves. The other reason for the use of dye colors is that they enable the manufacturer to use fruit of deficient color and thus to conceal inferiority. Apple stock uncolored is readily distinguished, but when dyed a brilliant crimson passes to the eye of the inexperienced buyer for the genuine fruit color. The preservation of this color is important, as the value of the jelly or jam for table use or in the sick room is doubtless enhanced by the attractiveness of its coloring, but the possibility for deception as to quality and purity afforded by the use of coloring matter overbalances any argument in its favor. By the judicious use of coal tar colors apple jellies flavored with small quantities of the true fruit, or by the artificial fruit ethers, can be given the appearance of the genuine article, or a cheap fruit or a vegetable pulp can be mixed into a jam, and jellies made from glucose and starch may be served to consumers who demand pure goods.

The harmfulness of the coal tar dyes depends on their composition. Many of them are quite innocuous, but are always liable to contain metallic impurities, such as zinc, copper, tin, lead, and arsenic retained during the process of manufacture. Others are distinctly injurious and entirely unsuitable for use in food products.

The cheap food products have undoubtedly become a necessity in the homes of the poor, where they have supplanted, to a large degree, more costly forms of food. But the apparent demand for

low-priced food does not amount to a license to the manufacturer to place adulterated goods on our market nor authorize him to lower, still further, the cost of production by making entirely fraudulent articles that would not command a sale at any price if honestly labeled and sold for what they were.

The custom of labeling jellies made from apple stock with some trade name that does not in any way lead the purchaser to suppose he is getting something which he is not is becoming more common. The sale of the cheap and wholesome apple jellies is thus placed on an honest basis and relieves the trade of the responsibility incurred by meeting the demand for cheap goods with base imitations.

Compound fruit products can legally be sold if they are labeled "Fruit Jellies" instead of "Currant," "Strawberry" jellies, etc. and if they bear a formula correctly stating the name and percentage of the ingredients used in their production. Of the 119 samples examined 97, or 81.5 per cent., have been illegal. Some of these goods were meant to be the pure article, but the majority of them were imitations. In many instances the manufacturer had evidently attempted to mark properly his goods, but notwithstanding this he had failed to comply with all the details of the labeling clause.

PRESERVED FRUITS, JELLIES AND JAMS—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzoate of Soda.	Color.	Remarks.
97	Crabapple Jelly—Purity.....	E. J. Dailey, Detroit	Alexandria .....	.....	.....	Pure.
248	Orange Pie Filler—Rex, Imitation .....	Hulman & Co., Terre Haute	Terre Haute..	.....	.....	Properly labeled.
296	Jam. Compound—N.Y. State Jams	Webster Preserving Co., Webster, N.Y.	Martinsville .....	.....	.....	Properly labeled.
307	Raspberry Jelly—Queen City, Compound .....	J. Keller, Cincinnati	Martinsville .....	Present.	Coal-tar dye ...	Properly labeled.
335	Home Made Apple Butter.....	Williams Bro. Co., Detroit	Vincennes ...	Present. ....	.....	Properly labeled.
338	Plum Preserves—Dragon .....	Williams Bro. Co., Detroit	Vincennes ...	.....	.....	Pure.
339	Pure Apple Jelly—Lemon .....	Williams Bro. Co., Detroit	Vincennes .....	.....	.....	Pure.

## PRESERVED FRUITS, JELLIES AND JAMS—LEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzo-ate of Soda.	Color.	Remarks.
1345	Currant Jelly—L. P. C. ....	Louisville Preserve Co., Louisville	Evansville .....			Properly labeled.
3684	Quince Jelly.....	Cruikshank Bros. Allegheny, Pa.	Irvington .....			Pure.
3762	Cranberry Jelly..	S. B. Powers, Dayton, O.	Indianapolis..			Pure.
3767	Elderberry Jelly..	Cruikshank Bros. Allegheny, Pa.	Indianapolis..			Pure.
4027	Apple Butter.....		Indianapolis..			Pure.
1426	Raspberry Jelly—Charm .....	F. MacVeagh & Co., Chicago	Huntington..			Properly labeled.
1464	Raspberry Jelly—L. P. C. ....	Louisville Preserving Co., Louisville	Booneville..			Pure.
1671	Plum Preserves—Morning Dew ..	American Gro. Co., Louisville	Salem .....			Pure.
3169	Pure Currant Jelly—Silver Jelly	Walsh, Boyle & Co., Chicago	Michigan Cty			Pure.
3202	Mince Meat—Bessire & Co. ....	B. & Co., Indpls.	Indianapolis..			Pure.
3263	Plum Jelly.....	W. D. Huffman, Indianapolis	Indianapolis..			Pure.
3363	Fruit Jelly—Plum Flavored	Williams Bros. Co., Detroit	Columbus....	Present		Properly labeled.
3600	Red Cherries Jam	Reid, Murdock & Co., Chicago	Indianapolis..			Pure.

## PRESERVED FRUITS, JELLIES AND JAMS—ILLEGAL.

51	Red Currant Jelly—Genesee....	Batavia Preserve Co., Genesee Co. New York	Anderson .....			Saccharine and salicylic acid present.
54	Blackberry Preserves—Queen City .....	J. Weller & Co., Cincinnati	Anderson ....	Present		Adulterated.
69	Pure Peach Jam Royal Blue.....	W. J. Quan & Co., Chicago	Elwood.....	Present		Adulterated.
71	Apple Jelly—Mrs Jones' .....	W. D. Huffman, Indianapolis	Elwood.....	Present		Saccharine present; adulterated.
81	Blackberry—Monarch .....	Reid, Murdock & Co., Chicago	Alexandria ..			Salicylic acid present; adulterated.
91	Apple Butter—Ky. Colonel ....	Blue Grass Canning Co., Owensboro, Ky.	Alexandria ..	Present		Saccharine present; adulterated.
136	Currant Jelly—Home Made....	Crescent Preserving Co., Indpls.	Brazil .....		Coal-tar dye....	Apple stock; adulterated.
142	Pure Apple Butter.....	Champion Syrup Refining Co., Indianapolis	Brazil .....	Present		Adulterated.
145	Currant Jelly—Buffalo.....	Hulman Preserve Co., Terre Haute	Brazil .....		Coal-tar dye....	Adulterated.

## PRESERVED FRUITS, JELLIES AND JAMS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzo-ate of Soda.	Color.	Remarks.
159	Apple Butter— Belle Farm ....	St. Louis Syrup and Preserve Co., St. Louis	Brasil .....	Present	.....	Adulterated.
181	Raspberry Jelly Dauntless .....	Hulman Preserve Co., Terre Haute	Terre Haute..	Present	.....	Decomposed apple stock; adulterated.
241	Strawberry Jam Rex .....	Hulman Preserve Co., Terre Haute	Terre Haute .	Present	.....	Apple stock present; adulterated.
266	Plum Preserves..	Faulkner-Webb Co., Indpls. ....	Terre Haute..	Present	.....	Adulterated.
269	Currant Jelly— Banquet .....	Lamon-Gohl Syr. Co., Chicago .....	Terre Haute..	Present	.....	Adulterated.
275	Currant Jelly....	Chicago Syr. and Refining Co., Chicago .....	Terre Haute..	.....	Coal-tar dye....	Saccharine present; adulterated.
282	Peach Butter— Buffet .....	Ind. Wholesale Gro. Co., Indpls.	Martinsville..	Present	.....	Made from apple stock; adulterated.
284	Champion Black- berry Jelly .....	Champion Syrup and Refining Co. Indianapolis....	Martinsville..	.....	.....	Wrongly la- beled; adul- terated.
318	B. & Co.'s Black- berry Pie Filling	Schrader & Co., Indianapolis	Martinsville..	Present	Coal-tar dye....	Saccharine; adulterated.
345	Home Made Plum Jelly .....	Mrs. Stewart, Lawrencev'le Ill.	Vincennes....	.....	.....	Saccharine present; adulterated.
475	Kenwood Rasp- berry Jelly .....	Kenwood Pre. Co. Chicago .....	Washington..	.....	.....	Wholly arti- ficial; adul- terated.
1233	Blackberry Flav. Fruit Jelly .....	Hulman & Co., Terre Haute ...	Mt. Vernon..	Present	Coal-tar dye....	Adulterated.
1242	Apple Jelly— Delmonico .....	W. D. Huffman, Indianapolis	Mt. Vernon..	Present	.....	Saccharine present; adulterated.
1258	Blackberry Jam.	St. Louis Syr. and Pres. Co., St. Louis .....	Mt. Vernon ..	.....	Coal-tar dye ...	Adulterated.
1288	Pure Quince Jelly—Blue La- bel .....	Curtis Bros. Co., Rochester	Evansville...	Present.	.....	Adulterated.
1365	Currant Jelly— Sugar and Fruit	E. Y. Dailey & Co., Detroit	Evansville...	.....	Coal-tar dye ...	Adulterated.
1404	Plum Jelly—Mrs. Jones .....	Huffman & Co., Indianapolis	Huntington..	Present.	.....	Saccharine present; adulterated.
1405	Raspberry Jelly..	Huffman & Co., Indianapolis	Huntington..	Present.	Coal-tar dye ...	Saccharine present; adulterated.
1422	Blackberry Pre- serves—Tri- umph, Com- pound .....	Dow & Snell Co., Toledo	Huntington..	.....	.....	Wrongly labeled.



## PRESERVED FRUITS, JELLIES AND JAMS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzoate of Soda.	Color.	Remarks.
1427	Maraschino Cherries—Club House.....	Franklin MacVeagh & Co., Chicago	Huntington..	Present.	Coal-tar dye ...	Adulterated.
1442	Peach Jelly—Outing, Compound.	Leroux Cider and Vinegar Co., Toledo	Huntington..	Present.	.....	Adulterated.
1449	Strawberry Jelly—Genesee	Sprague, Warner & Co., Chicago	Huntington.	Present.	.....	Apple stock; adulterated.
1462	Plum Jam—Home Made ...	St. Louis Syr. and Refining Co., St. Louis	Boonville ....	Present.	Coal-tar dye ...	Adulterated.
1463	Apple Butter—Gold Seal .....	St. Louis Syr. and Refining Co., St. Louis	Boonville ....	Present.	.....	Adulterated.
1524	Plum Jelly—H.A.	A. Holmes, Jeffersonville	Jeffersonville	.....	Coal-tar dye ...	Apple juice; adulterated.
1533	Plum Jelly—Premium, Adulterated .....	A. Holmes, Jeffersonville	Jeffersonville	.....	Coal-tar dye ...	Apple juice; adulterated.
1534	Apple Butter—Empire, Adulterated .....	Louisville Preserving Co., Louisville	Jeffersonville	Present.	Coal-tar dye ...	Adulterated.
1575	Cherry P'serves—Veribest.....	E. Ottenheimer & Son, Louisville	Jeffersonville	Present.	Coal-tar dye ...	Saccharine; adulterated.
1604	Grape Jelly Ohio Valley .....	E. Ottenheimer & Son, Louisville	New Albany.	.....	Coal-tar dye ...	Adulterated.
1730	Elderberry Jelly Cruikshank's	Cruikshank Bros. Co., Allegheny, Pa.....	Indianapolis.	Present.	.....	Adulterated.
1736	Cherries, Creme de Menthe—Choice Fruit...	Cincinnati Ext. Works, Cincinnati .....	Indianapolis.	Present.	Coal-tar dye ...	Adulterated.
1763	Cherries, Creme de Menthe.....	Cincinnati Ext. Works, Cincinnati .....	Indianapolis.	Present.	Coal-tar dye ...	Adulterated.
3005	Pure Apple Butter—New England .....	E. E. Dailey & Co., Detroit.	Kokomo.....	Present.	.....	Adulterated.
3012	Currant Jelly—Comet	Comet Preserving Co., Chicago...	Kokomo.....	.....	Coal-tar dye ...	Adulterated.
3018	Cherries—In Creme de Violet	Cincinnati Ext. Co., Cincinnati.	Kokomo.....	.....	Coal-tar dye ...	Adulterated.

## PRESERVED FRUITS, JELLIES AND JAMS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzo-ate of Soda.	Color.	Remarks.
3163	Strawberry Jam—Count .....	Cornet Preserv-ing Co., Chi-cago .....	Michigan C'y. ....	.....	Coal-tar dye ..	Adulterated.
3336	Apple Butter.....	Hoosier Packing Co., Indianap-olis.....	Indianapolis.	Present.	.....	Adulterated.
3337	Currant Jelly.....	Hoosier Packing Co., Indianap-olis.....	Indianapolis.	.....	Coal-tar dye ..	Made from apple stock, salicylic acid pres-ent, adul-terated.
3250	Raspberry Jelly.	Elgin Dairy .....	Indianapolis.	.....	Coal-tar dye ..	Saccharine present, adulterated.
3251	Currant Jelly....	Elgin Dairy .....	Indianapolis.	.....	Coal-tar dye ..	Saccharine present, adulterated.
3252	Blackberry Pre-serves .....	B. & Co., Indpls.	Indianapolis.	Present.	Coal-tar dye ..	Adulterated.
3261	Jelly .....	B. & Co., Indpls.	Indianapolis.	.....	Coal-tar dye ..	Much free sulphuric acid pres-ent, adul-terated.
3289	Currant Jelly Queen City, Compound .....	J. Weller & Co., Cincinnati	Indianapolis.	.....	Coal-tar dye ..	Compound, adulterated
3390	Orange Marma-lade, Superior.	Webster Preserv-ing Co., Web-ster, N. Y. ....	Indianapolis.	Present.	.....	Adulterated.
3313	Strawberry Jelly—Champion, Compound .....	Champion Syrup Refining Co., Indianapolis...	Columbus.....	.....	.....	Wrongly labeled, adulterated
3321	Fruit Jelly—Compound, Currant Flavor	Webster Preserv-ing Co., Web-ster, N. Y. ....	Columbus.....	Present in large amount	.....	Adulterated.
3322	Fruit Jelly—Compound, Crabapple Fla-vor .....	Webster Preserv-ing Co., Web-ster, N. Y. ....	Columbus.....	Present in large amount	.....	Adulterated.
3351	Raspberry Pre-serves—F. B. C.	Fromhold Bros., Indianapolis	Columbus ..	Present.	.....	Saccharine present, adulterated.
3374	Raspberry Pie Filling—B. & Co.'s.....	B. & Co., Indpls.	Columbus.....	Present.	Coal-tar dye.....	Adulterated.
3400	Mince Meat—Old-fashioned .....	Champion Syr. and Refin'g Co., Indianapolis...	Columbus.....	.....	.....	Salicylic acid present, adulterated.

## PRESERVED FRUITS, JELLIES AND JAMS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzoate of Soda.	Color.	Remarks.
3402	Currant Jelly - New York State, Compound.....	Webster Preserving Co., Webster, N. Y. ....	Columbus....	Present.	Coal-tar dye....	Saccharine present, adulterated.
3403	Apple Butter—Pure.....	Champion Syr. and Refin'g Co., Indianapolis....	Columbus....	Present.	Coal-tar dye....	Saccharine present, adulterated.
3420	Raspberry Jelly—Buffet, Compound.....	Indiana Wholesale Gro. Co., Indianapolis....	Columbus....		Coal-tar dye....	Wrongly labeled, adulterated.
3421	Currant Jelly - Buffet .....	Indiana Wholesale Gro. Co., Indianapolis....	Columbus....		Coal-tar dye....	Saccharine present, adulterated.
3422	Strawberry Jelly—Buffet .....	Indiana Wholesale Gro. Co., Indianapolis....	Columbus....	Present.	Coal-tar dye....	Saccharine present, adulterated.
3423	Strawberry Pie Filling—B. & Co.'s.....	B. & Co., Indpls.	Columbus....	Present.	Coal-tar dye....	Adulterated.
3434	Currant Jelly—Purity—Exwaco, Compound..	Exley-Watkins Co., Wheeling, W. Va.....	Columbus....		Coal-tar dye....	Saccharine present, adulterated.
3435	Raspberry Jelly—Purity—Exwaco .....	Exley-Watkins Co., Wheeling, W. Va.....	Columbus....	Present.	Coal-tar dye....	Saccharine present, adulterated
3436	Plum Jelly—Compound—Purity—Exwaco..	Exley-Watkins Co., Wheeling, W. Va.....	Columbus....	Present.	Coal-tar dye....	Saccharine present, adulterated.
3437	Strawberry Jelly—Purity—Exwaco, Compound.....	Exley-Watkins Co., Wheeling, W. Va.....	Columbus....	Present.	Coal-tar dye..	Saccharine present, adulterated
3446	Preserved Quinces—Lippincott.....	Lippincott & Cree Co., Cincinnati.	Columbus....	Present.	.....	Adulterated.

## PRESERVED FRUITS, JELLIES AND JAMS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzoate of Soda.	Color.	Remarks.
3447	Strawberries—New York State Jams.....	Webster Preserving Co., Webster, N. Y.....	Columbus....	Present.	Coal-tar dye..	Adulterated.
3448	Strawberry Preserves—Lippincott.....	Lippincott & Cree Co., Cincinnati.	Columbus....	.....	Coal-tar dye..	Adulterated.
3462	Maraschino Cherries.....	.....	Columbus....	.....	Coal-tar dye..	Adulterated.
3547	Maraschino Cherries.....	Cincinnati Ext. Co., Cincinnati.	Indianapolis.	Present.	Coal-tar dye..	Saccharine present, adulterated
3552	Black Currant Jam.....	Austin, Nichols & Co., New York.	Indianapolis.	Present	.....	Adulterated.
3553	Black Raspberry Preserves—Purity.....	Cruikshank Bros. Co., Allegheny, Pa.....	Indianapolis.	Present.	.....	Adulterated.
3595	Pineapple—Monarch, Maraschino.....	Reid, Murdock & Co., Chicago....	Indianapolis.	Present.	.....	Salicylic acid present, adulterated
3641	Red Raspberry Preserves—Banner Brand.	Lamon-Gohl Syr. Co., Chicago....	Indianapolis.	.....	Coal-tar dye..	Adulterated.
3646	Raspberry Jelly—Compound...	Webster Preserving Co., Webster, N. Y.....	Indianapolis.	Present	Coal-tar dye..	Saccharine present, adulterated
3647	Blackberry Jelly—Queen City...	J. Weller Co., Cincinnati	Indianapolis.	Present.	Coal-tar dye..	Adulterated.
3648	Raspberry Jelly Champion.....	Champion Syr. and Refining Co., Indianapolis.....	Indianapolis.	.....	Coal-tar dye..	Adulterated.
3654	Black Raspberry—Thelma.....	Franklin McVeagh Co., Chicago.....	Indianapolis.	Present.	.....	Salicylic acid, adulterated
3660	Strawberry Preserves—Exwaco.....	Exley-Watkins Co., Wheeling, W. Va.....	Indianapolis.	.....	.....	Labels do not agree, adulterated.
3664	Crabapple Jelly—Compound.....	Webster Preserving Co., Webster, N. Y.....	Indianapolis.	.....	.....	Saccharine present, adulterated
3666	Currant Jelly—Compound.....	Webster Preserving Co., Wheeling, W. Va.....	Indianapolis.	Present.	.....	Adulterated.

## PRESERVED FRUITS, JELLIES AND JAMS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzoate of Soda.	Color.	Remarks.
3674	Raspberry Preserves—Belmont .....	Chicago Concentrating Co., Chicago.	Irvington ....	Present. ....		Saccharine present, adulterated.
3764	Gooseberry Jam.	Chas. Southwell & Co., London, England.	Indianapolis. ....			Saccharine present, adulterated.
3768	Elderberry Jelly.	Cruikshank Bros., Allegheny, Pa.	Indianapolis.	Present. ....		Adulterated.
3769	Grape Jelly.....	Cruikshank Bros., Allegheny, Pa.	Indianapolis.	Present. ....		Adulterated.
3770	Apple Jelly.....	Cruikshank Bros., Allegheny, Pa.	Indianapolis.	Present. ....		Adulterated.
4025	Fruit Preserves—Niagara .....	John Boyle & Co., Baltimore, Md.		Present.	Coal-tar dye...	Adulterated.
4026	Grape Jelly—Compound.....	Syrup Refining Co., Indianapolis			Coal-tar dye...	Improperly labeled, adulterated.
4028	Jelly .....				Coal-tar dye...	Salicylic acid, adulterated.

## PRESERVED FRUITS PUT UP IN TIN PACKAGE.

We have examined 13 samples of fruits, blackberries, strawberries, etc., put up in tin. All of the samples were pure, containing neither coloring matter or added preservatives. The difference in character between goods put up in glass and those put up in tin is very apparent.

## CANNED FRUITS, CHERRIES—LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Wt. Cont. in Gms.	SO <sub>2</sub> Mgt. Per Liter.	Color.	Per Cent. Syrup.	Preservatives.
1747	Pitted .....	Curtice Bros. & Co., Rochester, N. Y.	Indianapolis.	699	0.0	Natural.	45	None.
3585	White Horse.....	Reid, Murdock & Co., Chicago.....	Indianapolis.	593	0.0	Natural.	37	None.
3687	Algonquin .....	Fort-Stanwix Co., Rome, N. Y.	Irvington ....	636	0.0	Natural.	33	None.
3688	White Seal.....	Corbin Sons & Co., Chicago.	Irvington ....	705	0.0	Natural.	33	None.

## BLACKBERRIES LEGAL.

297	Fredonia Beauty.	Fredonia Packing Co., Fredonia, N. Y.	Martinsville.	691	0.0	Natural.	38	None.
1759	Jumbo.....	Miller Bros. & Co., Baltimore.	Indianapolis.	549	0.0	Natural.	52	None.

## MISCELLANEOUS CANNED FRUITS—LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Per Cent. Syrup.	SO <sub>2</sub> Mgs. Per Liter	Color.	Preservative.
1740	Jones' Favorite Apple Sauce...	W. N. Clark & Co., Rochester, N. Y.	Indianapolis.	66.8	0.0	.....	None.
1741	Table Preserves, strawberries...	Curtice Bros., Rochester, N. Y.	Indianapolis.	40.0	0.0	Natural.	None.
3627	Strawberries.....	Miller Bros. & Co., Baltimore, Md.	Indianapolis.	76.0	0.0	Natural.	None.
3679	Monogram Apricots.....	J. C. Perry & Co., Indianapolis.	Irvington ....	51.0	0.0	.....	None.
3686	Hartland Fancy Yellow Peaches	Corbin Sons & Co., Chicago.	Irvington ....	32.0	0.0	.....	None.

## BLACK RASPBERRIES—LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Wt. Cont. in Gms.	SO <sub>2</sub> Mgs. Per Liter.	Color.	Per Cent. Syrup.	Preservatives.
3592	Monarch.....	Reid, Murdock & Co., Chicago, Ill.	Indianapolis.	632	0.0	Natural.	32	None.
3711	American.....	Kidwell Bros. & Co., Baltimore...	Irvington ...	538	0.0	Natural.	50	None.

## CANNED GOODS. VEGETABLES.

One of the leading staples of the modern grocery store and an essential of every well-stocked larder is an assortment of canned vegetables. These goods are put up in tin and sterilized by heat and will keep indefinitely in any climate, thus providing the table with apparently fresh vegetables when they are long out of season or can not be obtained. Of the 20 samples of sweet corn analyzed, 15 were pure, free from preservatives, saccharin or bleach. Four contained saccharin and one sample was a field corn boiled until soft and mixed with corn meal gruel. It was solid in the can and possessed none of the qualities of a sweet corn.

Canners and packers are accustomed to regulate the value of their output by increasing or diminishing the quantity of water in which the goods are packed. The least quantity of water found was 61 per cent. and the largest amount 82.6 per cent. That is, the first sample contained 39 per cent. of solid matter, the second 17.4 per cent., or less than one-half as much. The weight of the contents of the cans varied from 567 to 616 grams.

Of the ten samples of canned peas examined five were pure and five adulterated. One sample was a "soaked" pea, that is, made by swelling up dried peas and canning them as fresh, though it is obvious that goods so packed lack the fresh, succulent flavor which makes the vegetable desirable.

Four samples contained saccharin. Some years ago saccharin was extensively used by packers, but at present no up-to-date house relies on this coal tar sweetener as a substitute for sugar. None of the peas were colored with salts of copper. The use of copper in greening vegetables is not an American trick and most of the goods so colored are of French origin.

All of the canned tomatoes were pure, free from added color and preservative.

Two of the three baked beans were pure. One contained saccharin. The same ratio of adulteration was found in the canned beans, one sample of which was sweetened with saccharin.

Four of the six samples of mushrooms were illegal, two because of the presence of sulphurous acid, one because it was sour and one sample consisted of pieces and stems.

Two of the five samples of asparagus contained small quantities of sulphurous acid.

CANNED GOODS—SWEET CORN—LEGAL.

Laboratory Number.	Brand.	Manufacturer or Wholesaler.	Where Collected.	Wt. of Contents of Can in Gms.	Water Per Cent.	SO <sub>2</sub> , Mg. Per Liter.	Acidity as c.c. n/10 NaOH per 100 c.c.	Preservative.
1722	"Hindi" .....	The Wayneville Can Co., Wayneville, O. ....	Indianapolis.	552	.....	0.0	12.0	.....
1716	"Betty's Hulled Green" .....	A. E. Betty Can Co., Dayton, O. ....	Indianapolis.	605	61.0	0.0	16.0	.....
3241	"Empire" .....	Winters & Prophet, Mt. Morris, N. Y. ....	Indianapolis.	580	81.8	0.0	15.6	.....
3253	"Swain's Best" ..	C. W. Swain Can Co., Salina, O. ....	Indianapolis.	585	76.4	0.0	20.0	.....
3273	"Logan Elm" ...	Scioto Canning Co., Circleville, Ohio .....	Indianapolis.	622	75.8	0.0	13.2	.....
3291	"Summer Garden" .....	Chambers Can Co., Lewis-creek, Ind. ....	Indianapolis.	602	82.6	0.0	15.0	.....
3297	"Holly" .....	Walsh-Boyle Co., Chicago. ....	Indianapolis.	575	78.0	0.0	13.2	.....
3596	"Cording's Choice" ..	Coal Creek Can Co., Wingate, Ind. ....	Indianapolis.	580	77.8	0.0	12.0	.....
3638	"Delicious" .....	Chambers Can Co., Lewis Creek, Ind. ....	Indianapolis.	602	81.0	0.0	12.8	.....

## CANNED GOODS—SWEET CORN—LEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer or Wholesaler.	Where Collected.	Wt. of Contents of Can in Gms.	Water Per Cent.	SO <sub>2</sub> Mg. Per Liter.	Acidity as NaOH per 100 c.	Preservative.
3639	"El Mar"....	Brinkmeyer, Kuhn & Co., Indianapolis.....	Indianapolis.	578	76.2	0.0	12.8	.....
3667	"Silver Dollar" ..	Silver Creek Preserv. Co., Silver Creek, N. Y. ....	Indianapolis.	567	74.0	0.0	13.6	.....
3681	"Emerald" .....	Portland Packing Co., Portland, Me. ....	Irrington....	589	79.1	0.0	12.0	.....
3682	"Fame" .....	Grafton Johnson Co., Greenwood.	Irrington....	584	78.6	0.0	14.0	.....
3690	"Algonquin" ....	Ft. Stanwix Can Co., Rome, N.Y.	Irrington....	566	80.6	0.0	8.0	.....
1726	"Winore Kerneled" .....	Winore Can Co., Dayton, O	Indianapolis.	616	71.5	0.0	24.0	.....

## CANNED GOODS—SWEET CORN—ILLEGAL.

3751	"Premier" .....	Francis, Leggett & Co., New York	Indianapolis.	597	79.1	0.0	12.0	Saccharin.
3588	"Wish Bone" ...	J. F. Humphreys Co., Bloomington, Ill. ....	Indianapolis.	586	78.1	0.0	.....	Saccharin.
3626	"Holly" .....	Walsh, Boyle & Co., Chicago....	Indianapolis.	579	72.8	0.0	15.6	Saccharin.
3708	"King" .....	Grafton Johnson, Greenwood, Ind.	Irrington....	609	79.2	1.3	.....	Saccharin.
3254	*Cook's Delight..	Warrensburg Can Co., Warrensburg, Ill. ....	Indianapolis.	566	79.9	0.0	2.8	Not a sweet corn.

\*Made from field corn and corn meal.

## CANNED PEAS—LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Per Cent. H <sub>2</sub> O.	Wt. Conts. in Gms.	SO <sub>2</sub> Mgs. per Liter.	Cu'n to Na OH per 100 Gms.	Preservatives.	Remarks.
3294	Noble.....	Yale Canning Co. Yale, Mich.	Indianapolis	45	601	0.0	17.6	.....	Hard.
3295	Silver Dollar .....	Yale Canning Co. Yale, Mich.	Indianapolis	36	616	0.0	21.6	.....	
3296	Yale Pride .....	Yale Canning Co. Yale, Mich.	Indianapolis	42	569	0.0	20.4	.....	
3589	Pettit-Own .....	Indianapolis.....	Indianapolis	45	601	0.0	16.8	.....	
3689	Polk's Best .....	J. T. Polk Co., Greenwood, Ind.	Irrington....	34	581	0.0	15.2	.....	



## CANNED PEAS—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Per Cent. H <sub>2</sub> O	Wt. Conts. in Gms.	SO <sub>2</sub> Mgs. per Liter.	CC <sup>10</sup> to Na OH per 100 Gms.	Preserva-tives.	Remarks.
3274	Standard.	Martinsville Can-ning Co., Mar-tinsville.....	Indianapolis	44	594	0.0	12.0	Saccharin	Soaked Peas.
3293	Calumet...	Assan Baine Co., Baltimore.	Indianapolis	47	575	0.0	9.6	.....	
3623	Little Hoosier.	J. C. Perry & Co., Indianapolis.	Indianapolis	50	598	0.0	8.0	Saccharin	
3625	Silver Dollar	Silver Creek Pre-serve Co., Chau-tauqua, N. Y....	Indianapolis	47	600	0.0	11.2	Saccharin	Rotten
3709	Bay View, Early June....	Bay View Can Co. Huron, N. Y.	Irrington....	43	595	0.0	24.0	Saccharin	

## CANNED GOODS—TOMATOES—LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Wt. Con-tents.	Per Cent. Water.	SO <sub>2</sub> Mgs. Per Liter.	Color.	Preserva-tives.
3235	Buffet....	W. T. Bacon Co., Indianapolis.	Indianapolis	952	94.2	0.0	Nat'lral	None.
3272	Standard.	Martinsville Canning Co., Martinsville, Ind.	Indianapolis	967	94.8	0.0	Nat'lral	None.
3292	Cadet.....	J. C. Perry & Co., Indianapolis.	Indianapolis	947	93.6	0.0	Nat'lral	None.

## CANNED GOODS—BAKED BEANS—LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Preservatives.
1758	Phoenix. ....	Schnull & Co., Indianapolis....	Indianapolis.....	None.
3680	Polk's Best .....	J. T. Polk, Greenwood, Ind. ....	Irrington .....	None.

## CANNED GOODS—BAKED BEANS—ILLEGAL.

3624	May Day.....	Greenwood Packing Co., Greenwood, Ind.	Indianapolis.....	Contains Sac-charin.
------	--------------	--	-------------------	----------------------

## CANNED BEANS—LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Per Cent. H <sub>2</sub> O.	Wt. Cont. in Grams.	SO <sub>2</sub> Mgs. Per Liter	CCN <sub>2</sub> NaOH Per 100 Grams.	Preservatives
1754	Golden Wax.	Curtice Bros., Rochester N. Y.	Indianapolis.	42	559	0.0	13.2	.....
3629	.....	John Fisher & Co., Baltimore, Md.	Indianapolis.	38	573	0.0	36.0	.....

## CANNED BEANS—ILLEGAL.

3587	Monarch .....	.....	Indianapolis.	23	530	0.0	10.4	Saccharin.
------	---------------	-------	---------------	----	-----	-----	------	------------

## CANNED GOODS, MUSHROOMS—LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	SO <sub>2</sub> Mgs. Per Liter.	Remarks.
4450	Champignons, Cr. Choix.....	N. Y. Store.....	Indianapolis...	0	Legal.
4451	Champignons, Bland's Extra.	N. Y. Store.....	Indianapolis...	0	.....

## CANNED GOODS, MUSHROOMS—ILLEGAL

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	SO <sub>2</sub> Mgs. Per Liter.	Remarks.
3760	.....	Louis Freres & Co., France	Indianapolis.	80.6	Preserved with sulfites. Corroded top.
3761	.....	.....	Indianapolis.	14.8	Contains sulfites.
3785	.....	Rodier Fils & Co., Bordeaux	Indianapolis.	0	Corroded top. Sour.
4449	.....	Vallet & Co., Bordeaux, France	Indianapolis.	0	Pieces and stems.

## CANNED GOODS, ASPARAGUS—LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	SO <sub>2</sub> Mgs. Per Liter.
1733	Ceres .....	M. C. Shea & Co. ....	Indianapolis.....	0.0
3623	C. O. C .....	Courtland Canning Co., San Francisco, Cal.	Indianapolis.....	0.0
3691	Phoenix.....	Schnull & Co., Indianapolis.....	Irvington .....	0.0

## CANNED GOODS, ASPARAGUS—ILLEGAL.

1743	Signature .....	Hickmott Asparagus Canning Co., Bouldin Island, Cal.	Indianapolis.....	5.10
3784	.....	Corvilles Pk. Co., San Francisco, Cal.....	Indianapolis.....	7.70

## SPICES.

At the time of the opening of the Laboratory, if the statements of wholesalers in spices are to be believed, the Indiana public did not know the character of pure spices, and was only content when supplied with imitation goods which contained so much starch, ground cocoanut shells and sawdust that the most susceptible palate would not respond unless tempted with teaspoonful doses.

We were informed that if pure, full strength goods were sold, the consumer would return them because their strong characteristic flavor excited his suspicions.

The results of the examination of 248 samples of spices corroborated in a measure this statement of the trade.

In the January Bulletin of this year we said:

"Of 68 samples of ground cloves purchased from drug stores 22, or 32.4 per cent., were adulterated by reason of added cocoanut shells, dirt, etc., while of 52 samples collected from grocery stores 25, or 48.1 per cent., were impure.

"One sample of ground cloves consisted of wheat starch, cayenne pepper and a small amount of cloves, and other samples were almost entirely cocoanut shells.

"Twenty-three samples of ground mustard were examined and seven proved to be grossly adulterated with wheat or corn starch colored with turmeric.

"Seven samples of capsicum, or cayenne pepper, out of 22 examined were adulterated.

"But the pepper samples were most heavily adulterated and of 84 samples analyzed 47, or 55.9 per cent., were impure.

"Ground olive stones are evidently the chief adulterant, although the various starches are much used. Some samples contained ground olive stones, wheat and buckwheat flour, together with a small percentage of pepper."

Our analyses of spices collected the summer following the opening of the Laboratory showed a very great difference in the quality of the spices sold; but six of 52 black peppers and one of 35 cloves were impure. This remarkable improvement is due to the position taken by the wholesalers and spice grinders of Indiana, who since the publication of our first analyses have refused to handle other than pure goods. Their repeated statement that the

spice business has never been better than during the last year is a sufficient denial of their former argument that pure spices were not in demand by their customers.

It is only fair to the manufacturers to say that the analyses following were made on old goods, probably put in stock by the retailer before the pure food law went into actual effect.

## BLACK PEPPER—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Remarks.
327	Strictly Pure.....	Thompson & Taylor, Chicago, Ill.	Martinsville .....	Pure.
393	Sterling.....	Jos. Strong, Terre Haute	Vincennes .....	Pure.
404	Dove .....	Frank Tea and Spice Co., Cincinnati, O.	Vincennes .....	Pure.
482	Monarch .....	Reid, Murdock & Co., Chicago, Ill.	Washington.....	Pure.
580	.....	Bought of J. S. Modison.	Terre Haute .....	Pure.
1009	.....	Bought of Chickasaw Pharmacy .....	Peru .....	Pure.
1036	.....	Bought of R. E. Clark	Wabash .....	Pure.
1068	.....	Bought of Butterbough & Co.	Wabash .....	Pure.
1144	St. George.....	Louis Seitz Gro. Co., Evansville	Oakland City.....	Pure.
1174	Dove .....	Frank Tea and Spice Co., Cincinnati, O.	Princeton .....	Pure.
1184	T. & T. ....	Thompson & Taylor Spice Co., Chicago, Ill.	Princeton .....	Pure.
1189	.....	Hulman & Co., Terre Haute, Ind.	Princeton .....	Pure.
1209	.....	Bought of Meyer Bros. & Co.	Ft. Wayne .....	Pure.
1228	Pure.....	Frank Tea and Spice Co., Cincinnati, O.	Mt. Vernon .....	Pure.
1234	Mall .....	Frank Tea and Spice Co., Cincinnati, O.	Mt. Vernon .....	Pure.
1251	Dove.....	Frank Tea and Spice Co., Cincinnati, O.	Mt. Vernon .....	Pure.
1270	Pure.....	Hulman & Co., Terre Haute, Ind.	Mt. Vernon .....	Pure.
1275	Pure.....	Sherman Bros. Co., Chicago, Ill.	Mt. Vernon .....	Pure.
1282	Strictly Pure.....	Meyer Bros. Coffee and Spice Co., St. Louis, Mo.	Evansville .....	Pure.
1370	Pure.....	Woolson Spice Co. ....	Evansville .....	Pure.
1451	Mi-Go .....	Lafayette Gro. Co., Lafayette, Ind.	Huntington .....	Pure.
1478	Pure Spice. ....	Meyer Bros. Coffee and Spice Co., St. Louis, Mo.	Boonville .....	Pure.
1487	.....	Frank Tea and Spice Co., Cincinnati, O.	Boonville .....	Pure.
1495	St. George.....	Lewis Seitz Gro. Co., Evansville, Ind.	Boonville .....	Pure.
1499	.....	Lewis Seitz Gro. Co., Evansville, Ind.	Boonville .....	Pure.
1527	Newton's.....	Newton Tea and Spice Co., Cincinnati, O.	Jeffersonville ....	Pure.
1568	Pure.....	Woolson Spice Co., Cincinnati, O.	Jeffersonville ....	Pure.
1584	Golden Rod.....	Ullmann, Dreifus & Co., Cincinnati, O.	Jeffersonville ....	Pure.
1616	.....	Woolson Spice Co., Toledo, O.	New Albany .....	Pure.
1622	Premier.....	Francis H. Leggett & Co., New York	New Albany .....	Pure.
1662	Golden Rod.....	Ullmann, Dreifus & Co., Cincinnati, O.	Salem .....	Pure.
1668	Pure.....	Woolson Spice Co., Toledo, O.	Salem .....	Pure.

## BLACK PEPPER—LEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Remarks.
2935	.....	F. Widlar & Co., Cleveland, O.	Kokomo.....	Pure.
2296	.....	M. W. Edmond	Delphi.....	Pure.
3157	.....	Thompson & Taylor, Chicago, Ill.	Michigan City....	Pure.
3350	Ed. Haas' Choice Table Pepper...	Jno. Vorwald.....	Columbus.....	Pure.
3371	.....	Knight & McLain.....	Columbus.....	Pure.

## BLACK PEPPER—ILLEGAL.

320	.....	Geiger-Tinney Co., Lafayette, Ind.	Martinsville .....	Adulterated with foreign starch and olive stones.
322	.....	Frank Tea and Spice Co., Cincinnati, O.	Martinsville .....	Adulterated with buckwheat.
424	.....	Jos. Strong & Co., Terre Haute	Washington.....	Adulterated with ground olive stones.
435	.....	E. Bierhaue & Sons, Vincennes	Washington.....	Adulterated with wheat flour.
454	Nickel.. .....	Hulman & Co., Terre Haute	Washington.....	Adulterated with buckwheat.
1140	.....	Bement Seitz, Evansville, Ind	Oakland .....	Adulterated with ground olive stones.
1156	.....	J. F. Bruning & Co., Evansville	Oakland .....	Adulterated with foreign starch.
1183	.....	Gillett, Chicago.....	Princeton .....	Adulterated with wheat flour and ground olive stones.
1192	Ceylon .....	Lewis Seitz Gro. Co., Evansville	Princeton .....	Adulterated with wheat starch.
1199	India Mills (Compound).....	Parson & Seoville, Evansville	Princeton .....	Adulterated with wheat flour.
1204	.....	Jno. N. Bey & Co., Vincennes	Princeton.....	Total ash, 7%; insoluble ash 92%.
1256	Dove . .....	Frank Tea and Spice Co., Cincinnati, O.	Mt. Vernon .....	Adulterated with ground olive stones.
1330	.....	Karn & Co., Evansville .	Evansville .....	Adulterated with ground olive stones.
1366	Strictly Pure ....	Woolson Spice Co.....	Evansville .....	Adulterated with ground olive stones.
1371	Pure Brunings...	J. F. Bruning & Son, Evansville	Evansville.....	Adulterated with foreign starch.
1418	High Grade .....	J. P. Dieter & Co., Chicago	Huntington .....	Adulterated with foreign starch.
1519	.....	.....	Huntingburg .....	Adulterated with foreign starch.
1539	.....	A. Holmes, Jeffersonville	Jeffersonville....	Adulterated with ground olive stones.
1545	.....	Louisville Spice Co., Louisville, Ky.	Jeffersonville .....	Adulterated with foreign starch.
1591	.....	A. Kahn, Louisville, Ky.	Jeffersonville ..	Adulterated with wheat flour and ground olive stones.
1649	India Mills (compound).....	Englehart & Co., Louisville, Ky.	New Albany .....	Adulterated with wheat flour and buckwheat flour.

## BLACK PEPPER—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Remarks.
1667	Standard. ....	Standard Spice Mills, St. Louis, Mo.	Salem .....	Adulterated with wheat starch.
1680	.....	Cabell, Banye & Co., Louisville, Ky.	Salem .....	Adulterated with buckwheat and ground olive stones.
1690	.....	Ullman-Dreifus Co., Cincinnati, O.	Salem .....	Adulterated with wheat flour.
1707	.....	Bought of Williams Bros	Salem .....	Adulterated with ground olive stones.
1714	Singapore .....	S. P. Dieter Co., Chicago, Ill.	Kokomo .....	Adulterated with ground olive stones.
2906	.....	Bought of H. J. Huder ..	Indianapolis ..	Adulterated. Total ash, 6.19%; insoluble ash, 2.24%.
2985	.....	Thompson & Taylor Co., Chicago, Ill.	Kokomo ..	Adulterated with corn starch and ground olive stones.
2993	.....	.....	Kokomo .....	Adulterated with wheat starch and ground olive stones.
3010	Anchor .....	Richmond Extract Co., Richmond	Kokomo .....	Adulterated with ground olive stones.
3057	.....	F. P. Wilt & Co., Ft. Wayne	Ft. Wayne .....	Adulterated with ground olive stones.
3116	.....	Thompson-Taylor Co., Chicago	South Bend ....	Adulterated. Total ash, 6.97%; insoluble ash, .66%.
3148	.....	Steele-Wedeler, Chicago, Ill.	Michigan City ...	Adulterated with shells and wheat starch.
3309	.....	Bought of Court House Grocery Co. ....	Indianapolis .....	Adulterated with ground olive stones.
3359	.....	Heekin Spice Co., Cincinnati, O.	Columbus .....	Adulterated with ground olive stones.
3374	Reed's .....	Reed, Henderson & Co., Chicago	Columbus .....	Adulterated with ground olive stones.
3377	.....	Grocers' Supply Co., Indianapolis	Columbus .....	Adulterated with foreign starch.
3378	.....	Bought of J. B. Cook & Son .....	Columbus .....	Adulterated with foreign starch.
3407	.....	Heekin Spice Co., Cincinnati, O.	Columbus .....	Adulterated. Total ash, 6.94%; insoluble ash, .80%.
3428	.....	Bought of Jose Newson & Son .....	Columbus .....	Adulterated with wheat starch and ground olive stones.
3441	.....	J. C. Perry and Co., Indianapolis	Columbus .....	Adulterated with corn starch.
3561	.....	Bought of A. Bushman ..	Indianapolis .....	Adulterated with wheat flour.
3637	.....	Wixon & Co., Chicago, Ill.	Indianapolis .....	Adulterated with ground olive stones.
3724	.....	Bought of Court House Grocery .....	Indianapolis .....	Adulterated with ground olive stones.

## BLACK PEPPER—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Remarks.
3728	Good .....	Bought of Court House Grocery .....	Indianapolis.....	Adulterated with wheat starch and ground olive stones.
3751	Finest Quality...	J. B. Bright & Son.....	Indianapolis.....	Adulterated. Total ash, 7.11%; insoluble ash, 1.01%.
3833	.....	.....	Bloomington.....	Adulterated with wheat and buck-wheat flour and ground olive stones.

## GROUND MUSTARD—LEGAL.

1147	.....	Parson & Scoville, Evansville	Oakland City ....	Pure.
1176	Malabar .....	Frank Tea and Spice Co., Cincinnati	Princeton .....	Pure.
1496	St. George .....	Lewis Seitz Gro. Co., .....	Booneville .....	Pure.
1705	Royal .....	Dwinell-Wright Co., Boston	Kokomo.....	Pure.
2997	Globe .....	E. Widlar & Co., Cleveland	Kokomo.....	Pure.
3319	.....	H. J. Tooley .....	Columbus .....	Pure.
3323	.....	C. C. Scheidt, .....	Columbus .....	Pure.
3341	.....	John Vorwald .....	Columbus .....	Pure.
3410	.....	Heekin Spice Co., Cincinnati	Columbus .....	Pure.
3432	.....	Nixon & Co., Chicago ..	Columbus.....	Pure.
3452	.....	Kothe, Wells & Bauer, City	Columbus.....	Pure.
3472	.....	H. I. Quick.....	Columbus.....	Pure.
3479	Gillies Spice Mills .....	E. J. Gillies & Co., N. Y.	Columbus.....	Pure.
3738	.....	Pettis Dry Goods Co. ....	Indianapolis.....	Pure.
3749	Finest Quality...	W. B. Bright & Son.....	Indianapolis.....	Pure.

## GROUND MUSTARD—ILLEGAL.

298	Our Special .....	Payne & Clarkson.....	Martinsville .....	Adulterated with wheat starch.
637	.....	Frank Tea and Spice Co., Cincinnati	Evansville .....	Adulterated with wheat starch.
1482	.....	E. W. Gillette, Chicago..	Boonville .....	Adulterated with corn starch.
3367	.....	Knight & McLain.....	Columbus .....	Adulterated with foreign starch.
3388	.....	J. B. Cook & Son.....	Columbus .....	Adulterated with wheat starch and colored with turmeric.
3392	.....	Heekin Spice Co., Cincinnati	Columbus .....	Adulterated with wheat starch.
3727	.....	Court House Grocery ....	Indianapolis.....	Adulterated with corn starch.

## CAYENNE PEPPER—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Remarks.
421	.....	Jos. Strong & Co., Terre Haute.	Washington.....	Pure.
1237	H. & Co.....	Hulman & Co., Terre Haute.	Mt. Vernon.....	Pure.
1267	.....	Bought of Geo. L. Hoehn	Mt. Vernon.....	Pure.
1452	Royal.....	Dwindell & Wright, Boston, Mass.	Huntington.....	Pure.
1479	Meyer Bros. Pure	Meyer Bros. Coffee and Spice Co., St. Louis, Mo.	Boonville.....	Pure.
1544	.....	R. J. Thornton, Louisville, Ky.	Jeffersonville.....	Pure.
3391	.....	Heekin Spice Co., Cincinnati, O.	Columbus.....	Pure.
3469	.....	Heekin Spice Co., Cincinnati, O.	Columbus.....	Pure.
3478	African.....	Bennett, Simpson & Co., London, Eng.	Columbus.....	Pure.
3739	.....	Bought of Pettis Dry Goods Co.....	Indianapolis.....	Pure.
3836	.....	Schnull & Co.....	Bloomington.....	Pure.
1210	.....	Bradley Bros.....	Wabash.....	Pure.
1022	.....	Meyer Bros. & Co.....	Ft. Wayne.....	Pure.
2173	.....	Summer's Pharmacy.....	Hammond.....	Pure.
2354	.....	J. D. Bartlett.....	Lafayette.....	Pure.

## CAYENNE PEPPER—ILLEGAL.

Laboratory Number.	Manufacturer.	Where Collected.	Total Ash.	Insoluble Ash.	Remarks.
3305	Bought of Court House Grocery Co..	West Indpls..	.....	.....	Adulterated with wheat starch.
504	S. Herr.....	Brazil.....	.....	.....	Adulter'd with much foreign starch.
601	G. W. J. Hoffman.....	Terre Haute..	.....	.....	Adulter'd with much foreign starch.
834	A. G. Troutman.....	Oakland City.	.....	.....	Adulter'd with much foreign starch.
1863	Houseworth Bros ..	Elkhart.....	10.55	2.03	Adulterated.
3728	Court House Grocery.	Indianapolis.	.....	.....	Heavily adulter'd with wheat starch.
438	Jno. N. Bey & Co., Vincennes.	Washington..	.....	.....	Heavily adulter'd with wheat flour.

## ALLSPICE—LEGAL.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.
389	.....	Frank Tea & Spice Co., Cincinnati, O .....	Vincennes.
477	Standard.....	Reed, Murdock & Co., Chicago, Ill .....	Washington.
1067	.....	Butterbaugh & Co., Wabash, Ind .....	Wabash.
1197	.....	H. G. Sommers, Ft. Wayne, Ind .....	Ft. Wayne.
1250	Pure.....	Frank Tea & Spice Co., Cincinnati, O .....	Mt. Vernon.
1257	Dove.....	Frank Tea & Spice Co., Cincinnati, O .....	Mt. Vernon.
1276	.....	Sherman Bros. & Co., Chicago, Ill .....	Mt. Vernon.
1361	Pure.....	Thompson & Taylor, Chicago, Ill .....	Evansville.
1389	Perfect.....	A. H. Perfect & Co.....	Huntington.
1480	Meyer Bros. Pure Spice	Meyer Bros. Coffee & Spice Co., St. Louis, Mo.	Boonville.
1485	.....	Lewis Seitz Gro. Co., Evansville, Ind .....	Boonville.



## ALLSPICE—LEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.
1500		Lewis Seitz Gro. Co., Evansville, Ind.	Bourville.
1531	Pure.....	R. J. Thornton, Louisville, Ky.	Jeffersonville.
1541		R. J. Thornton, Louisville, Ky.	Jeffersonville.
1565	Pure.....	Woolson Spice Co., Toledo, O.	Jeffersonville.
1586	Golden Rod.....	Ullmann, Dreifus & Co., Cincinnati, O.	Jeffersonville.
1618	Pure.....	R. J. Thornton & Co., Louisville, Ky.	New Albany.
1703	Pimemto Royal.....	Dwinell-Wright Co., Boston, Mass.	Kokomo.
2045		F. W. Meissner, Laporte, Ind.	Laporte.
2367		Wells-Yeager-Best Co., Lafayette, Ind.	Lafayette.
2386		Thompson & Taylor Co., Chicago, Ill.	Kokomo.
2392		F. Widlar & Co., Cleveland, O.	Kokomo.
2394		F. Widlar & Co., Cleveland, O.	Kokomo.
3004	Triumph.....	Grocers' Supply Co., Indianapolis, Ind.	Kokomo.
3058		F. P. Wilt & Co., Ft. Wayne, Ind.	Ft. Wayne.
3114		Thompson & Taylor Co., Chicago, Ill.	So. Bend.
3147		Durand & Kasper, Chicago, Ill.	Michigan City.
3159		Thompson & Taylor Co., Chicago, Ill.	Michigan City.
3301		Court House Gro. Co., Indianapolis, Ind.	Indianapolis.
3324		C. C. Scheidt, Columbus, Ind.	Indianapolis.
3369		E. J. Gillies & Co., New York.	Columbus.
3412		Heekin Spice Co., Cincinnati, O.	Columbus.
3430		Nixon & Co., Chicago, Ill.	Columbus.
3442	Quaker.....	Schnull & Co., Indianapolis, Ind.	Columbus.
3455		Kothe, Wells & Bauer, Indianapolis, Ind.	Columbus.
3743		Pettis D. G. Co., Indianapolis, Ind.	Indianapolis.
3750	Finest Quality.....	J. B. Bright & Son, Indianapolis, Ind.	Indianapolis.
3832		Schnull & Co., Indianapolis, Ind.	Bloomington.

## ALLSPICE—ILLEGAL

1236		F. C. Dietz, Mt. Vernon, Ind.	Mt. Vernon.
1502	Pure.....	Sherman Bros. & Co., Chicago, Ill.	Evansville.
2171		Hulman & Co., Terre Haute, Ind.	Huntingburg.
3317		H. S. Quick, Columbus, Ind.	Hammond.
3472		H. J. Fooley, Columbus, Ind.	Columbus.

## GINGER—LEGAL.

Laboratory Number.	Retailer.	Where Collected.
947	D. & H. Rosebaum.....	Mt. Vernon.
789	Housworth Bros.....	Elkhart.
1976	Myers Drug Store.....	South Bend.
2012	O. C. Boston.....	South Bend.
2170	Summers Pharmacy.....	Hammond.
2201	W. C. Letherman.....	Valparaiso.
2252	G. W. Hoffmann.....	Logansport.
2340	Rogan Bros.....	Lafayette.
2351	J. D. Bartlett.....	Lafayette.
2456	Cassell Bros.....	Anderson.
2469	Buck & Brickley.....	Anderson.
2547	Physicians Drug Store.....	Muncie.
2563	W. H. Bireley.....	Alexandria.
2580	City Drug Store.....	Alexandria.
2591	E. D. Robinson.....	Alexandria.
2637	J. H. Green.....	Elwood.
2747	F. H. Gerhart.....	Kokomo.
2798	S. Rosenthal.....	Tipton.
2810	L. T. Harker.....	Tipton.
2955	E. H. Wilson.....	Indianapolis.

## GINGER—LEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.
3507	O. L. Mitchell.....	Noblesville.
992	Blue Drug Store.....	Peru.
1128	J. C. Hutzell.....	Ft. Wayne.
1840	H. M. Phillips.....	Auburn.
1896	F. J. Goldman.....	Elkhart.
1910	Leonard & Bentz.....	Elkhart.
1939	O. J. Beeson.....	Goshen.
1993	A. Coonley & Co.....	South Bend.
2023	R. P. Milton.....	South Bend.
2054	J. M. Callender.....	Laporte.
2142	J. W. Weis.....	Hammond.
2185	Corner Drug Store.....	Valparaiso.
2366	Wells Yeager-Best Co.....	Lafayette.
2534	Shaw & Jackson.....	Muncie.
2676	Jay Bros.....	Kokomo.
2821	H. Mehlig.....	Tipton.
2980	Navin's Pharmacy No. 1.....	Indianapolis.
3491	Frank E. Ross.....	Noblesville.
3511	A. N. Truitt.....	Noblesville.
3899	B. Doolittle.....	Jeffersonville.
3932	Doherty's Drug Store.....	Jeffersonville.

## GINGER—ILLEGAL.

2854	W. M. Birk.....	Indianapolis...	Adulterated with ground olive stones.
2893	Chas. D. Knoefel.....	New Albany...	

## GROUND CLOVES—LEGAL.

Collected from Drug Stores.

Laboratory Number.	Brand.	Druggists.	Where Collected.	Total Ash.	Insoluble Ash.	Remarks.
577	.....	J. S. Madison.....	Terre Haute..	.....	.....	Pure.
615	.....	Baur.....	Terre Haute..	.....	.....	Pure.
658	.....	H. J. Werker.....	Vincennes.....	.....	.....	Pure.
669	.....	W. C. Watjen.....	Vincennes.....	.....	.....	Pure.
684	.....	R. G. Moore.....	Vincennes.....	.....	.....	Pure.
702	.....	C. S. Miller.....	Vincennes.....	.....	.....	Pure.
883	.....	Meek & Albers.....	Evansville.....	.....	.....	Pure.
932	.....	Dawson & Boyce.....	Mt. Vernon.....	5.71	0.32	Pure.
975	.....	Porter The Druggist.....	Peru.....	.....	.....	Pure.
1085	.....	Butterbaugh & Co.....	Wabash.....	.....	.....	Pure.
1195	.....	H. G. Sommers.....	Ft. Wayne.....	.....	.....	Pure.
1211	.....	Meyer Bros. & Co.....	Ft. Wayne.....	.....	.....	Pure.
1813	.....	Ashton Stamen.....	Auburn.....	.....	.....	Pure.
1909	.....	Leonard & Bentz.....	Elkhart.....	.....	.....	Pure.
1964	.....	Public Drug Store.....	South Bend.....	.....	.....	Pure.
1997	.....	C. Coonley & Co.....	South Bend.....	.....	.....	Pure.
2027	.....	D. C. Peters.....	Laporte.....	.....	.....	Pure.
2028	.....	F. W. Meisner.....	Laporte.....	.....	.....	Pure.
2056	.....	T. H. Boyd & Co.....	Laporte.....	.....	.....	Pure.
2105	.....	E. W. Lindemann.....	Michigan City.....	.....	.....	Pure.
2141	.....	J. W. Weis.....	Hammond.....	.....	.....	Pure.
2156	.....	M. Kolb.....	Hammond.....	.....	.....	Pure.
2240	.....	Ben Fisher.....	Logansport.....	.....	.....	Pure.
2281	.....	Red Cross Pharmacy.....	Logansport.....	.....	.....	Pure.
2294	.....	M. W. Edmonds.....	Delphi.....	.....	.....	Pure.
2334	.....	W. W. Johnson.....	Lafayette.....	.....	.....	Pure.
2426	.....	J. B. Wehrle.....	Anderson.....	.....	.....	Pure.
2440	.....	City Drug Store.....	Anderson.....	.....	.....	Pure.
2467	.....	Buck & Brickley.....	Anderson.....	.....	.....	Pure.

**GROUND CLOVES—LEGAL—Continued.**  
Collected from Drug Stores.

Laboratory Number.	Brand.	Druggists.	Where Collected.	Total Ash.	Insoluble Ash.	Remarks.
2494	.....	People's Drug Store.....	Muncie.....	.....	.....	Pure.
2537	.....	Shaw & Jackson.....	Muncie.....	.....	.....	Pure.
2549	.....	Physicians Drug Store..	Muncie.....	.....	.....	Pure.
2577	.....	City Drug Store.....	Alexandria.....	.....	.....	Pure.
2589	.....	E. C. Robinson.....	Alexandria.....	.....	.....	Pure.
2601	.....	F. C. Jones.....	Alexandria.....	.....	.....	Pure.
2612	.....	Stringfellow & Co.....	Elwood.....	.....	.....	Pure.
2678	.....	Jay Bros.....	Kokomo.....	.....	.....	Pure.
2692	.....	L. Mehlig.....	Kokomo.....	.....	.....	Pure.
2746	.....	F. H. Gerhart.....	Kokomo.....	.....	.....	Pure.
2796	.....	S. Rosenthal.....	Tipton.....	.....	.....	Pure.
2822	.....	H. Mehlig.....	Tipton.....	.....	.....	Pure.
2837	.....	Francis Pharmacy.....	Indianapolis.....	.....	.....	Pure.
2920	.....	E. W. Stucky.....	Indianapolis.....	.....	.....	Pure.
2934	.....	I. N. Heims.....	Indianapolis.....	4.14	0.19	Pure.
3508	.....	C. L. Mitchell.....	Noblesville.....	.....	.....	Pure.
3512	.....	A. W. Truitt.....	Noblesville.....	.....	.....	Pure.

Collected from Grocery Stores.

236	Crystal.....	Hulman & Co., Terre Haute	Terre Haute.....	.....	.....	Pure.
401	Dove.....	Frank Tea & Spice Co., Cincinnati	Vincennes.....	.....	.....	Pure.
422	.....	Jos. Strong & Co., Terre Haute	Washington..	.....	.....	Pure.
455	Nickel.....	Hulman & Co., Terre Haute	Washington..	.....	.....	Pure.
479	Monarch.....	Reid, Murdock & Co., Chicago	Washington..	.....	.....	Pure.
1141	.....	—, Evansville.....	Oakland City.	.....	.....	Pure.
1172	Dove.....	Frank Tea & Spice Co., Cincinnati	Princeton.....	.....	.....	Pure.
1179	.....	Hulman & Co., Terre Haute	Princeton.....	.....	.....	Pure.
1182	T. & T.....	Thompson & Taylor Spice Co., Chicago	Princeton.....	.....	.....	Pure.
1235	Dove.....	Frank Tea & Spice Co., Cincinnati	Mt. Vernon..	.....	.....	Pure.
1266	.....	Geo. L. Hoehn.....	Mt. Vernon..	.....	.....	Pure.
1360	Pure..	Thompson & Taylor, Chicago	Evansville..	.....	.....	Pure.
1387	Perfect.....	Huntington Grocery Co., Huntington	Huntington..	.....	.....	Pure.
1406	Gauntlet.....	E. R. Durkee & Co., N. Y.	Huntington..	.....	.....	Pure.
1493	St. George.....	Lewis Seitz Gro. Co., Evansville	Boonville....	.....	.....	Pure.
1503	.....	Lewis Seitz Gro. Co., Evansville	Boonville....	.....	.....	Pure.
1587	Golden Rod.....	Ulmann Drefus Co., Cincinnati	Jeffersonville	.....	.....	Pure.
2988	.....	Thompson & Taylor, Chicago	Kokomo.....	.....	.....	Pure.
3068	.....	A. H. Perfect & Co., Ft. Wayne	Ft. Wayne....	.....	.....	Pure.
3113	.....	Thompson & Taylor Co., Chicago	South Bend..	.....	.....	Pure.
3146	.....	Durand & Kasper, Chicago	Michigan City	.....	.....	Pure.
3156	.....	Thompson & Taylor, Chicago	Michigan City	.....	.....	Pure.
3175	.....	Walsh, Boyle & Co., Chicago	Michigan City	.....	.....	Pure.
3389	.....	Heekin Spice Co., Cincinnati	Columbus.....	.....	.....	Pure.
3411	.....	J. C. Perry Co., Indianapolis	Columbus.....	.....	.....	Pure.
3429	.....	Wixon & Co., Chicago..	Columbus.....	.....	.....	Pure.
3476	Gillies Mills spices.....	E. J. Gillies & Co., N. Y.	Columbus.....	.....	.....	Pure.

## GROUND CLOVES—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Total Ash.	Insol. Ash.	Remarks.
437	.....	John N. Bey, Vincennes	Washington..	.....	.....	Adulterated with cocoanut shells.
1155	.....	Bruning & Co., Evansville	Oakland City	.....	.....	Adulterated with cocoanut shells.
1177	Malabar.....	Frank Tea & Spice Co., Cincinnati	Princeton....	.....	.....	Adulterated with cocoanut shells.
1227	Pure.....	Frank Tea & Spice Co., Cincinnati	Mt. Vernon..	.....	.....	Adulterated with cocoanut shells.
1252	.....	Frank Tea & Spice Co., Cincinnati	Mt. Vernon..	.....	.....	Adulterated with cocoanut shells.
1277	.....	Sherman Bros. & Co., Chicago	Mt. Vernon..	.....	.....	Adulterated with cocoanut shells.
1283	.....	Meyer Bros. Coffee and Spice Co., St. Louis	Evansville...	.....	.....	Adulterated with wheat starch.
1301	Pure.....	Sherman Bros. & Co., Chicago	Evansville...	.....	.....	Adulterated with cocoanut shells.
1329	.....	Karn & Co., Evansville.	Evansville...	.....	.....	Adulterated with cocoanut shells and wheat starch.
1468	.....	Bement, Seitz & Co., Evansville	Booneville...	.....	.....	Adulterated with cocoanut shells.
1507	Pure.....	Arabian Mills, Chicago.	Huntingburg.	.....	.....	Adulterated with cocoanut shells.
152	.....	Hulman & Co., Terre Haute	Huntingburg.	.....	.....	Adulterated with cocoanut shells and wheat starch.
1529	Pure.....	R. J. Thornton & Co., Louisville	Jeffersonville	.....	.....	Adulterated with cocoanut shells.
1542	.....	R. J. Thornton & Co., Louisville	Jeffersonville	.....	.....	Adulterated with cocoanut shells.
1566	Pure.....	Woolson Spice Co., Cincinnati	Jeffersonville	.....	.....	Adulterated.
1590	.....	Thornton, Louisville...	Jeffersonville	.....	.....	Adulterated with cocoanut shells.
1646	Pure.....	R. J. Thornton & Co., Louisville	New Albany.	.....	.....	Adulterated with cocoanut shells.
2998	Triumph.....	Grocers Supply Co., Indianapolis	Kokomo.....	.....	.....	Adulterated with cocoanut shells.
3300	.....	Court House Grocery, (west) Indianapolis	Indianapolis.	.....	.....	Adulterated with cocoanut shells.
3347	.....	C. C. Sheidt.....	Columbus.....	.....	.....	Adulterated with foreign starch.
3356	.....	John Vorwald.....	Columbus.....	.....	.....	Adulterated with cocoanut shells.
3444	Quaker.....	Indianapolis.....	Columbus.....	14.47	4.34	Adulterated.
3454	.....	.....	Columbus.....	10.71	2.06	Adulterated.
3471	.....	H. S. Quick.....	Columbus.....	.....	.....	Adulterated with cocoanut shells.
3740	.....	Pettis Dry Goods Co....	Indianapolis.	.....	.....	Adulterated.
600	.....	G. W. J. Hoffman.....	Terre Haute.	5.74%	0.82%	Excess cocoanut shells and stems; adulterated.
626	.....	G. Reiss.....	Terre Haute.	5.86	0.62	Adulterated.
717	.....	I. J. Biggs.....	Princeton.....	.....	.....	Adulterated with starch.
1035	.....	R. E. Clark.....	Wabash.....	6.37	1.14	Adulterated.
1682	.....	Central Drug Store.....	Elkhart.....	5.97	0.69	Adulterated.

## GROUND CLOVES—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Total Ash.	Insol. Ash.	Remarks.
1978		Meyers Drug Store.....	South Bend			Adulterated with cocoanut shells
2011		O. C. Boston.....	South Bend	7.01	0.51	Adulterated.
2184		Corner Drug Store.....	Valparaiso	8.07	1.27	Adulterated.
2213		Heineman & Sievers.....	Valparaiso			Adulterated with cocoanut shells.
2263		W. H. Porter.....	Logansport			Adulterated with large amount of cocoanut shells.
2307		M. M. Murphy.....	Delphi	6.19	1.02	Adulterated with cocoanut shells
2562		W. H. Bireley.....	Alexandria			Adulterated with wheat starch and cayenne pepper.
2656		W. Cogswell.....	Elwood			Small amount of stems; adulterated.
2807		L. T. Harker.....	Tipton	6.47	1.07	Adulterated.
2850		W. M. Birk.....	Indianapolis	8.31	0.50	Adulterated.
2866		A. B. Carr.....	Indianapolis			Cocoanut shells present; adulterated.
2849		F. H. Carter.....	Indianapolis	5.81	0.58	Adulterated.
2918		Weber Drug Co.....	Indianapolis			Cocoanut shells present; adulterated.
2967		E. H. Wilson.....	Indianapolis	6.25	0.89	Adulterated.
2981		Navin's Pharmacy No. 1.....	Indianapolis			Adulterated with foreign starch.
3533		Will E. Axline & Co.....	Noblesville			Heavily adulterated with cocoanut shells.
3516		A. G. Baldwin.....	Noblesville			Adulterated with cocoanut shells.

## MISCELLANEOUS SPICES—LEGAL.

2819	Powd. Ginger Jama.	Francis Pharmacy	Indianapolis	
4152	Triumph Ginger	Sent in by Grocers' Supply Co.	Indianapolis	
4164	White Pepper	Sent in by Schnull & Co.	Indianapolis	3.80%
4165	Cinnamon	Sent in by Schnull & Co.	Indianapolis	3.2%
4167	Ginger	Sent in by Schnull & Co.	Indianapolis	6.75%
4168	Allspice	Sent in by Schnull & Co.	Indianapolis	4.68%
4173	Diadem Cinnamon	Sent in by Schnull & Co.	Indianapolis	3.91%
4175	Diadem Ginger	Sent in by Schnull & Co.	Indianapolis	4.43%
4177	Diadem Allspice	Sent in by Schnull & Co.	Indianapolis	3.50%
4178	Diadem Sage	Sent in by Schnull & Co.	Indianapolis	4.87%
4180	Quaker Cinnamon	Sent in by Schnull & Co.	Indianapolis	3.17%
4181	Quaker Ginger	Sent in by Schnull & Co.	Indianapolis	7.00%
4183	Quaker Allspice	Sent in by Schnull & Co.	Indianapolis	4.85%
4184	Quaker Mace	Sent in by Schnull & Co.	Indianapolis	2.41%

## TOMATO CATSUPS.

We have examined 75 samples of tomato catsup and found 67, or 89.3 per cent., to be adulterated. The adulteration in many instances was due to the use of benzoate of soda as a preservative without declaring the fact on the label. Other samples contained coal-tar dye or an excess of starch. Under the ruling of the State Board of Health one-tenth of one per cent. of benzoate of soda can

be used in making tomato catsup if the fact of its presence is stated on the label, but coal-tar dye or other dye is not allowable. Tomato catsup naturally made is brown in color, and the unnatural desire on the part of the consumer for a highly colored product, together with the fact that the use of color made it possible to employ green and inferior stock, induced the manufacturer to resort to artificial color. At the present time, however, the public taste has completely changed, and all high grade catsups are now sold uncolored. The use of starch as a filler and of saccharin as a sweetener is both illegal and unnecessary. Several bottles of artificial goods bore a compound label which was pasted directly on the bottom of the package in such a way that its presence would not likely be detected. Such labeling is an evasion of the law as the goods might as well bear no label whatever.

## TOMATO CATSUPS—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzoate of Soda.	Color.	Starch.	Remarks.
140	Lippincott.	Lippincott Co., Cincinnati...	Brazil.....	Present.	.....	.....	Legally labeled.
1424	Club House.	Franklin MacVeagh & Co., Chicago.....	Huntington	.....	.....	.....	Pure.
1435	Chili Sauce.	Joseph Campbell Preserve Co., Camden, N. J.....	Huntington	Present.	.....	.....	Legally labeled.
1443	Beefsteak..	Joseph Campbell Preserve Co., Camden, N. J.....	Huntington	Present.	Cochineal.....	.....	Legally labeled.
387	Hoffman House....	J. Weller Co., Cincinnati, O.	Vincennes.	Present.	.....	.....	Legally labeled.
3449	Lippincott.	Lippincott & Cree Co., Cincinnati.....	Columbus..	Present.	.....	.....	Legally labeled.
3554	Blue Label.	Curtice Bros Rochester, N. Y.....	Indianapolis.....	Present.	Cochineal.....	.....	Legally labeled.
1576	Pure Gold..	J. Weller & Co., Cincinnati, O.	Jeffersonville.....	Present.	Coal-tar dye. ..	Excess	Legally labeled.

## TOMATO CATSUPS—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzo-ate of Soda.	Color.	Starch.	Remarks.
68	Sunny Side	Tip-Top Ketch-up Co., Cincinnati	Elwood.....	Present.	Coal-tar dye.....	Excess	Bulk goods; saccharin present; adulter'd.
235	Crystal.....	Hulman & Co., Terre Haute	Terre Haute	Present.	.....	Excess	Adultera'd.
283	Yankee Doodle...	American Relish Co., Indianapolis	Martinsville	Present.	.....	Excess	Adultera'd.
291	Bordeaux.	Standard Packing Co., Indianapolis	Martinsville	Present.	.....	.....	Adultera'd.
299	Butler's Tomato Ketchup..	Tip-Top Ketch-up Co., Cincinnati	Martinsville	Present.	.....	.....	Adultera'd.
300	Tobasco Pepper...	Geo. A. Boyle St. Louis	Martinsville	Present.	.....	Excess	Adultera'd.
366	Standard...	Hirsh Bros., Louisville	Vincennes	Present.	Coal-tar dye.....	Excess	Illegally labeled; adulter'd.
367	Phoenix Home Made.....	Standard Packing Co., Greenwood, Indiana	Vincennes	Present.	.....	.....	Adultera'd.
369	Ever'body's	Greenwood Packing Co., Greenwood, Indiana	Vincennes	Present.	.....	Excess	Label on bottom; illegally labeled.
1395	Old Tavern.	Berdan & Co., Toledo	Huntington	Present.	.....	Excess	Adultera'd.
1414	Standard...	Hirsh Bros., Louisville	Huntington	Present.	.....	Excess	Saccharin present; adulter'd.
1415	Perfect.....	A. H. Perfect & Co., Ft. Wayne	Huntington	Present.	Coal-tar dye,.....	.....	Adultera'd
1421	Sunlight...	Royal Packing Co., Chicago..	Huntington	.....	Coal-tar dye.....	.....	Saccharin present; adulter'd.
1445	Matchless..	Acme Preserve Co., Adrian, Mich.....	Huntington	Present.	Coal-tar dye...	Excess	Adultera'd.
1367	Butler's ...	Tip-Top Ketch-up Co., Cincinnati, O.	Evansville.	Present.	.....	Excess	Saccharin present; adulter'd.
1467	Star .....	Star Packing Co Hamilton, O.	Boonville..	Present	Coal-tar dye.....	Excess	Adultera'd.
1476	Hirsh's Standard.	Hirsh Bros., Louisville.	Boonville..	Present.	Coal-tar dye.....	Excess	Saccharin present; illegally labeled.

## TOMATO CATSUPS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzoate of Soda.	Color.	Starch.	Remarks.
1290	Blue Label.	Curtice Bros. Co., Rochester, N. Y. ....	Evansville.	Present.	.....	.....	Adultera'd.
1508	Home Jersey.....	Jersey Pack Co. Hamilton, O.	Huntingb's	.....	Coal-tar dye.....	Excess	Adultera'd.
1523	May Day ...	Greenwood Pickling Co., Greenw'd, Ind.	Huntingb's	Present.	Coal-tar dye.....	.....	Improperly labeled.
1558	Goodman's High Grade ...	Kahn & Co., Louisville ...	Jeffers'ville	Present.	Coal-tar dye.....	Excess	Saccharin present, adulter'd.
1672	Cadet.....	J. C. Perry & Co., Indianapolis, Ind	Salem.....	Present.	.....	.....	Adultera'd.
1677	Hoosier ....	Crescent Packing Co., Indianapolis ...	Salem.....	.....	Coal-tar dye.....	Excess	Saccharin present, adulter'd.
3008	Queen of the Gas Belt..	Spencer & Horgan Co., Marion, Ind.....	Kokomo ...	Present	.....	Excess	Adultera'd.
3009	Hero.....	Am. Relish Co., Indianapolis.	Kokomo ...	Present in exc's.	Coal-tar dye.....	Excess	Adultera'd.
3062	Perfect....	A. H. Perfect, Ft. Wayne ...	Ft. Wayne .	Present.	.....	.....	Adultera'd.
3063	Mother's Choice....	Early Packing Co., Xenia, O.	Ft. Wayne .	Present in exc's.	.....	.....	Adultera'd.
3150	Pride of England	Van Camp Packing Co., Indianapolis.	Mich. City .	Present.	.....	.....	Adultera'd.
3168	Matchless..	Acme Preserving Co., Adrian, Mich.....	Mich. City .	Present in exc's.	Coal-tar dye.....	Slight Excess	Adultera'd.
3181	Home Made	C. F. Claussen & Son, Chicago	Hammond .	Present in exc's.	Coal-tar dye.....	.....	Adultera'd.
3238	Acme .....	Thatcher, Keller Co., Indpls	India'polis.	Present.	Coal-tar dye.....	Excess	Adultera'd.
3256	Yankee Doodle ...	Am. Relish Co., Indianapolis.	India'polis.	Present in exc's.	Coal-tar dye.....	Excess	Adultera'd.
3243	El Mar.....	Brinkmeyer, Kuhn & Co., Indianapolis.	India'polis.	Present.	.....	.....	Adultera'd.
3280	Rose Bud ..	Bt. of Court House Groc'y Co., Indpls...	India'polis.	Present in exc's.	Coal-tar dye.....	Excess	Adultera'd.
3288	.....	Bt. of Court House Groc'y Co., Indpls...	India'polis.	Present in exc's.	Coal-tar dye.....	Excess	Adultera'd.
3373	Excellent..	Excellent Canning Co., Indianapolis .....	Columbus..	Present.	Coal-tar dye.....	Excess	Adultera'd.



## TOMATO CATSUPS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzoate of Soda.	Color.	Starch.	Remarks.
3406	Log Cabin	Marion County Preserving Co., Indianapolis	Columbus	Present.			Saccharin present; adulter'd.
3424	Butler's	Tip-Top Ketchup Co., Cincinnati	Columbus	Present.	Coal-tar dye	Excess	Illegally labeled.
37	Live Oak	Hamilton Canning Co., Hamilton, O.	Vincennes		Coal-tar dye	Excess	Adulter'd.
3440	Cadet	J.C. Perry & Co., Indpls., Ind.	Columbus		Coal-tar dye		Adulter'd.
441	Delmonico	W. D. Huffman & Co., Indpls.	Washington	Present	Coal-tar dye	Excess	Saccharin present; adulterated.
474	Standard	Exley-Watkins Co., Wheeling, W. Va.	Washington	Present.		Excess	Saccharin present; illegally labeled.
3597	Love Apple	J.T. Polk & Co., Greenwood, Ind.	Indpls.	Present.			Saccharin present; adulterated.
3598	Polk's Best	J.T. Polk & Co., Greenwood, Ind.	Indpls.	Present.			Adulter'd.
120	Bordeaux	Standard Packing Co., Indpls.	Princeton	Present.	Coal-tar dye		Saccharin present; adulterated.
3619		Huffman & Co., Indianapolis.	Indpls.	Present.	Coal-tar dye	Excess	Saccharin present; adulterated.
1215	Butler's	Tip-Top Ketchup Co., Cincinnati	Princeton	Present.	Coal-tar dye	Excess	Illegally labeled.
3644	Sweet Home	Sweet Home Catsup Co., Indpls.	Indpls.	Present.	Coal-tar dye	Excess	Adulter'd.
1230	Kentucky Moonshine	Kentucky Canning Co., Owensboro, Ky.	Mt. Vernon		Coal-tar dye	Excess	Illegally labeled.
3661	Rose Bud	Court House Grocery Co., Indianapolis.	Indpls.	Present.	Coal-tar dye	Excess	Adulter'd.
1245	Delmonico	W. D. Huffman, Indianapolis.	Mt. Vernon	Present.	Coal-tar dye	Excess	Saccharin present; adulterated.

## TOMATO CATSUPS—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Benzoate of Soda.	Color.	Starch.	Remarks.
1268	U. S. ....	Standard Packing Co., Indianapolis.	Mt. Vernon	Excess Present.	Coal-tar dye .....		Adultera'd.
1292	.....	J. T. Polk Co., Greenwood, Ind. ....	Evansville.	Present	Coal-tar dye .....	Slight Excess	Adultera'd.
1342	Daisy .....	W. D. Huffman, Indianapolis.	Evansville.	Present.	Coal-tar dye .....	Excess	Adultera'd. Saccharin present; adulterated
4579	Royal Blue	W. J. Quan & Co., Chicago..	Noblesville	Present.	Normal...	None.	Adultera'd.
4855	Flower Cy..	Purity Pres. Co., Richmo'd	Indpls. ....	Present.	Normal...	None.	Saccharin present.
5240	Home Made	T. A. Snider & Co., Cincinnati	Muncie.....	Present.	Coal-tar...	None.	Adultera'd.
5708	Magpie .....	W. J. Quan Co., Chicago	Elwood.....	Present	Normal...	Pre'nt	Adultera'd.
5888	B. B. B. ...	Lisbon Pickle Works.....	Ft. Wayne.	Present.	Coal-tar...	None.	Saccharin present.
5919	.....	Crescent Pres. Co., Indpls...	Danville...	Present.	Coal-tar dye .....	Pre'nt	Adultera'd.
6028	Everybodys	Greenwood Pk. Co. ....	Goshen.....	Present.	Normal...	None.	Saccharin present.
6037	.....	H. Wichert, Chicago	Goshen .....		Normal...	Much.	Adultera'd.
6045	Butler .....	Tip-Top Ketchup Co., Cincinnati	Elkhart .....		Coal-tar dye .....	Pre'nt	Saccharin present.
6083	Matchless.	Acme Pres. Co., Adrian, Mich.	Elkhart....	Present	Normal...	Pre'nt	Adultera'd.
6092	Silver Seal.	Walsh, Boyle Co., Chicago..	Elkhart....	Present.	Coal-tar dye .....	Pre'nt	Adultera'd.
6105	Monarch ...	Reid, Murdock & Co., Chicago	South Bend	Present.	Coal-tar dye .....	Normal.	Adultera'd.

## BEERS, WINES AND SUMMER DRINKS.

While certain classes of beverages, notably those containing greater or less quantities of alcohol, are consumed throughout the year, during the hot summer months the people demand a light, refreshing, attractive beverage that is not consumed at other seasons. In the summer months, too, the consumption of malt liquors is largely increased. The number and variety of the summer drinks is very large. For the most part they are produced by bottlers and dealers who supply the local market, although certain of the fruit juices have obtained a widespread sale through-

out the country. In order to determine the purity of these summer drinks we have collected and analyzed many samples of the products sold on the Indianapolis market. The results of our analyses follow the remarks under each class described below.

### BEER.

The production of malt liquors in this country as an industry is second only in importance to the production of breadstuffs. Their consumption is steadily on the increase, as is also the amount consumed in proportion to other kinds of alcoholic beverages. Beer is prepared largely from malted grain, usually barley, although other substances, such as corn, rice and glucose, frequently enter into its composition. Properly defined, beer is a beverage produced by alcoholic fermentation from a hopped infusion, either of malted cereals, preferably malted barley exclusively, or with the addition of unmalted or prepared cereals. Besides the malt and sugars which enter into the composition of beer, and which, in the form of infusions, are converted by yeast into alcohol, hops are also employed to give a palatable bitter to the product. Besides the malt or some fermentable sugar and the hops no other constituent should be present. The chemical composition of the finished product is, however, very complex, the principal constituents being alcohol, various sugars and carbohydrates, nitrogenous matter, carbonic, acetic, succinic, lactic, malic, and tannic acids, bitter and resinous extractive matter from the hops, glycerine and various mineral constituents, consisting mainly of phosphates of the alkalies and alkali earths.

The names given to different kinds of malt liquors relate to various attributes, as the country where they were produced, as English, German, Bavarian beer, etc. Thus porter is simply a beer of high percentage of alcohol and made from malt dried at a somewhat high temperature, which gives it its dark color. Ale is a pale beer, likewise of high attenuation and made of pale malt, with more hop extract than porter. Stout has less alcohol and more extract and still less hops than porter. These terms are used chiefly with reference to English malt liquors. The terms used for German beers, such as Erlanger, Munchener, etc., are for the most part names of places, and are applied to beers made in im-

itation of the beers originally brewed in those cities. Export beer is beer that is specially prepared with a view to long-keeping qualities.

The analyses made at this Laboratory comprise 27 samples, this number being about all of the different brands and varieties of beer obtainable in Indianapolis. The analyses were made principally for the purpose of determining the extent and nature of their adulteration or the use of antiseptic and preservative agents. As a basis for determining adulteration, however, it is necessary to know the chemical composition of the sample, and for that reason a complete analyses of all the beers has been made. Results of the analyses show very little adulteration either in imported or domestic beers. Several of the samples examined, namely, Nos. 4349, 4355, 4358 and 4359, contain sulphurous acid or sulphites; none contained benzoic or salicylic acids, and but one sample, which was a Weiss beer, contained saccharin. An examination of the tabulated results shows that none of the beers departed widely in composition from the normal products. The imported beers have a high alcohol and extract content, and were brewed from a much heavier wort than were the domestic beers. From a chemical standpoint the domestic beers were very uniform in composition, there being no great difference in either the alcohol or extract content.

## DOMESTIC BEERS.

Laboratory Number.	Brand.	Manufacturer.	Specific Gravity at 20° C.	Alcohol, gms. per 100 c. c.	Extract, gms. per 100 c. c.	Ash gms. per 100 c. c.	Phosphoric Acid.	Total Acids, as Lactic.	Vol. Acids, as Reducing Sugars.	Dextrin.	Polarisation.		Specific Gravity, orig. wort.	Extract orig. wort.	Degree of Fermentation.	SO <sub>2</sub> , mg. per liter.	Benzoate of Soda.	Salicylic Acid.	Saccharin.	
4212	Bohemian.....	American Brewing Co., Indianapolis, Ind.	1.0145	3.63	5.28	.149	.108	.153	.012	1.74	2.32	+41.0	+36.4	1.0473	12.54	60.98	10.24	—	—	—
4213	Duesseldorf.....	Indianapolis Brewing Co., Indianapolis, Ind.	1.0132	4.21	4.98	.138	.132	.090	.012	1.40	2.12	+39.4	+40.9	1.0528	13.31	66.92	17.92	—	—	—
4214	Blue Ribbon.....	Pabst Brewing Co., Milwaukee, Wis.	1.0125	3.51	5.61	.114	.041	.180	.036	1.80	2.95	+48.8	+49.2	1.0481	12.75	58.99	14.08	—	—	—
4216	Export Pale.....	Anheuser Bush Co., St. Louis, Mo.	1.0149	4.03	5.46	.160	.094	.180	.012	1.96	2.11	+39.4	+43.5	1.0510	13.52	63.14	8.96	—	—	—
4218	.....	Torre Haute Brewing Co., Terre Haute, Ind.	1.0191	4.03	5.58	.126	.094	.089	.018	1.77	2.54	+43.8	+41.5	1.0541	13.64	62.60	7.68	—	—	—
4219	.....	Home Brewing Co., Indianapolis, Ind.	1.0099	4.27	4.50	.166	.010	.144	.018	1.09	2.00	+32.0	+33.4	1.0412	13.04	69.18	14.08	—	—	—
4231	Pilsner Export.....	F. Hollender & Co., Chicago, Ill.	1.0135	3.87	5.05	.200	.056	.171	.012	1.82	1.60	+33.2	+37.8	1.0482	12.79	63.93	12.80	—	—	—
4238	Budweiser Lager.....	Anheuser Bush Co., St. Louis, Mo.	1.0135	4.27	5.34	.137	.074	.171	.024	1.78	2.41	+42.4	+44.0	1.0559	14.88	61.04	14.08	—	—	—
4238*	.....	Indianapolis Brewing Co., Indianapolis, Ind.	1.0221	3.93	4.83	.128	.098	.234	.060	1.84	1.77	+5.4	+36.8	1.0479	12.69	65.40	8.96	—	—	—
4239	.....	Schlitz, Milwaukee, Wis.	1.0118	3.72	5.23	.135	.046	.144	.012	1.96	1.92	+38.2	+38.4	1.0478	12.67	61.86	10.24	—	—	—
4252	Lemp's Extra Pale.....	Wm. J. Lemp Brewing Co., St. Louis, Mo.	1.0111	4.09	4.63	.117	.046	.207	.012	1.29	2.31	+37.2	+39.1	1.0463	12.81	67.43	10.24	—	—	—
4334	Progress Brand—Duesseldorf.....	Indianapolis Brewing Co., Indianapolis, Ind.	1.0109	4.15	4.65	.155	.098	.126	.006	1.57	1.87	+34.4	+36.5	1.0489	12.95	67.99	19.20	—	—	—
4343	Sedererbrau Nürnberg.....	J. Metzger Co., Indianapolis, Ind.	1.0099	4.09	4.58	.182	.084	.207	.012	1.22	1.87	+31.6	+29.0	1.0181	12.76	67.65	16.64	—	—	—
4349	Bohemian.....	J. Metzger Co., Indianapolis, Ind.	1.0171	3.75	7.14	.233	.083	.135	.012	2.00	3.70	+59.2	+62.5	1.0651	14.64	54.33	24.32	—	—	—

4350	Berliner Weiss Beer.....	J. Metzger Co., Indianapolis, Ind.	1.0073	2.91	2.84	.097	.070	.279	.086	0.77	1.39	+21.2	+22.8	1.0390	8.66	69.92	5.76	—	—
4353	Indiana's Pride .....	Geo. A. Bohrer Brewing Co., Lafayette, Ind.	1.0098	4.96	4.96	.157	.056	.189	.006	1.39	1.99	+34.4	+35.0	1.0558	14.85	71.03	12.80	—	—
4274	Cream of Hops.....	The Hamburger Co., Chicago, Ill.	1.0079	2.37	3.19	.090	.082	.072	.006	0.81	1.50	+24.0	+31.1	1.0299	7.93	61.81	6.40	—	—
4355	Bohemian.....	Terre Haute Brewing Co., Terre Haute, Ind.	1.0120	4.30	4.98	.137	.028	.086	.012	2.21	1.82	+39.0	+40.0	1.0612	13.57	63.37	21.76	—	—
4356	High Life .....	Fred Miller Brewing Co., Milwaukee, Wis.	1.0186	4.18	6.13	.139	.044	.054	.020	2.03	3.30	+55.0	+57.8	1.0574	14.52	57.57	16.64	—	—
4357	T. T.....	Capital City Brewing Co., Indianapolis, Ind.	1.0118	4.18	4.71	.183	.042	.135	.004	1.88	1.46	+32.2	+35.6	1.0493	13.05	64.06	.6	—	—
4358	Pilner.....	Jung Brewing Co., Cincinnati, Ohio.....	1.0129	4.21	5.00	.183	.030	.072	.009	1.84	1.96	+37.6	+40.0	1.0506	13.42	62.74	34.56	—	—
4359	Pure Gold.....	Cincinnati Brewing Co., Hamilton, Ohio.	1.0184	3.87	5.78	.180	.030	.131	.009	2.29	2.52	+49.0	+50.8	1.0510	13.62	57.98	58.32	—	—
4362*	Lithia Malt.....	A. Dieler, Indianapolis, Ind.	1.0049	1.64	2.89	.113	.026	.005	.003	1.23	.99	+20.4	+21.8	1.0294	6.17	53.16	7.68	—	—

\* A non-alcoholic beverage.

## FOREIGN BEERS AND ALES.

4233	Guinness Extra Stout .....	E. & J. Burke, Dublin, Ireland .....	1.0134	6.54	5.12	.327	.136	.406	.042	1.52	1.00	+23.9	—	1.0732	18.20	77.58	—	—	—
4255	Wurtzburger Beer.	F. Hoffende & Co., New York, N. Y.	1.0076	4.63	5.55	.208	.046	.288	.020	1.76	0.65	+22.8	+24.6	1.0587	14.81	66.57	12.80	—	—
4230	Bass & Co., Pale Ale .....	head Bros., London, England .....	1.0031	6.45	3.70	.377	.108	.243	.030	—	—	+16.8	—	1.0622	16.60	83.42	—	—	—
4254	McEwans' Sparkling Ale .....	McEwans, Edinburg, Scotland .....	1.0214	6.88	8.32	.304	.206	.243	.006	2.37	2.10	+43.6	+54.6	1.0531	22.08	68.21	2.69	—	—

### MALT EXTRACTS.

True malt extract is a syrupy fluid made by extracting and digesting coarsely powdered malt with water and evaporating the strained liquid to the consistency of thick syrup. Such an extract contains at least 70 per cent. of maltose and converts starch very rapidly. At the present there are on the market a very large number of so-called malt extracts which are widely advertised as a tonic and nonintoxicating malt food. These extracts are, for the most part, simply heavy beers, containing considerable quantities of alcohol and extract and no diastase. Two of the three samples of so-called malt extract examined contained 5 per cent. of alcohol each and 8 per cent. and over of extract, largely maltose. In other respects the samples were merely heavy beers. The third sample analyzed was of quite different composition, being low in alcohol and high in extract.

## MALT EXTRACTS.

Laboratory Number.	Brand.	Manufacturer.	Specific Gravity, 20° C.	Alcohol, g. per 100 c. c.	Extract, g. per 100 c. c.	Ash, g. per 100 c. c.	Phosphoric Acid.	Total Acid, as Lactic.	Vol. Acid, as Acetic.	Reducing Sugars, as Maltose.	Dextrine.	Polarisation.		Specific Gravity, Original Wort.	Extract, Original Wort.	Degree of Fermentation.	SO <sub>2</sub> , mg. per liter.	Benzoate of Soda.	Salicylic Acid.	Saccharin.
												Direct.	Invert.							
4244	Malt Marrow .....	McAvey Brewing Co., Chicago, Ill. ....	1.0254	5.00	7.99	2240	.012	.086	.012	3.50	2.72	+	60.0	+	1.0674	17.99	55.58	12.8	.....	.....
4246	Malt Nutrine ....	Anheuser-Bush, St. Louis, Mo. ....	1.0569	1.68	14.31	3630	.047	.292	.0192	3.23	6.78	+	104.8	+	1.0663	17.67	19.01	37.12	.....	.....
4251	"Best Tonic" .....	Pabst Brewing Co., Milwaukee, Wis. ....	1.0247	5.00	8.78	3060	.047	.126	.012	4.75	1.79	+	59.2	+	1.0708	18.78	53.24	28.16	.....	.....



## WINES.

American wines are rapidly becoming known for their excellent qualities and are competing with European brands for a reputation. That there are many imitation wines on the market has been common knowledge, but the most pessimistic observer would hardly wish to concede that more than 50 per cent. of the cheap wines never saw a grape. The results of the analyses of 20 samples of wines purchased at drug stores and grocery stores show this to be a fact. The first seven samples analyzed were wholly artificial products. They were made by soaking fruits, possibly raisins, fortifying the extracts with 12 to 15 per cent. of alcohol, adding large quantities of glucose, in one instance over 20 per cent., and in addition sweetening with saccharin to further develop the sweet taste. These samples contain salicylic acid and benzoate of soda as well as the saccharin, which is of itself a preservative. Evidently the original maker used a preservative to stop fermentation, and then the bottler used some more preservative of a different character to keep the goods after they had left his hands. The two blackberry cordials examined were entirely artificial, and consisted of glucose syrup colored with coal-tar dye and preserved with salicylic acid and benzoate of soda, flavored with synthetic flavors to counterfeit the missing blackberry. Wine has been adulterated for 2,000 years, but the harvest time of the manufacturer of artificial goods is evidently the present. An attractively labeled bottle marked "Purity Guaranteed," and filled with a decoction of salicylic acid, benzoate of soda, saccharin, glucose, grain alcohol, synthetic flavors, glycerine, coal-tar dye and water, meets a ready sale as pure California port or sherry, depending upon the aromatic employed.

Samples Nos. 1782, 1783, 1784, 3548, 3788, 3789 and 3790 are evidently grape products of a fair degree of purity, although of poor quality. Most of them contain either saccharin or some preservative which necessitates their being classed as illegal.

Samples Nos. 3787, 3791 and 3792 are evidently pure and free from any preservatives or saccharin.

## WINES—LEGAL.

Laboratory Number.	Brand.	Specific Gravity at 15.6° c.	Alcohol by Volume.	Alcohol, gms per 100 c.	(Glycerol, gm. per 100 c.	Glycerol—Alcohol, Ratio.	Extract, gm. per 100 c.	Ash, gm. per 100 c.	Extract Ash, Ratio.	Total Acids, gm. per 100 c.	Fixed Acids, gm. per 100 c.	Vol. Acids, gm. per 100 c.	Vol. Total Acid, Ratio.	Free Tartaric Acid, gm. per 100 c.	Tartaric Acid, Total, gm. per 100 c.	Pot. Bi-Tartrate, gm. per 100 c.	Direct Polarization.	Invert Polarization.	Reducing Sugars, gm. per 100 c.	Protein, gm. per 100 c.	Total Sulphuric Acid, gm. per 100 c.	Potassium Sulphate, gm. per 100 c.	Phosphoric Acid, gm. per 100 c.	Tannin, gm. per 100 c.	Undetermined Ex'ct, gm. per 100 c.	Color.	Salicylic Acid, Benzozate of Soda, Saccharin.	Preservative.	
3787	Alameda Zinfandel.	.9933	13.9	11.03	1.003	1: 11.0	2.56	2000	1: 7.4	744	432	242	1:3.07	150	180	.0752	.....	.....	1.564	2422	0013	.0597	.0331	.057	0.07	.....	.....	.....	.....
3791	Sonoma Sherry. ...	.9912	20.52	16.28	.871	1: 18.7	3.75	2720	1: 6.4	567	276	221	1:2.5	000	.022	1504	.....	.....	2.000	1509	.0008	.0312	.0760	.024	0.15	.....	.....	.....	.....
3792	Alameda Burgundy.	.9926	13.34	10.58	.914	1: 11.6	2.17	2400	1: 5.2	720	348	298	1:2.4	120	164	1.103	.....	.....	0.409	.0755	.0016	.0348	.0819	.066	0.12	.....	.....	.....	.....

## WINES—ILLEGAL.

1772	Cal. Sherry	1.0347	13.24	10.5	1.059	1: 10.0	13.34	1250	1:4.5	396	324	058	1:6.8	121	144	056	+36.4	+19.25	7.69	1053	.0030	.0332	1170	.066	3.968	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
------	-------------	--------	-------	------	-------	---------	-------	------	-------	-----	-----	-----	-------	-----	-----	-----	-------	--------	------	------	-------	-------	------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--

#### GINGER ALES.

Ginger ale is a nonalcoholic beverage made by carbonating a dilute solution of extract of ginger, sugar and some simple acid in water. It is a pleasant and refreshing beverage when properly prepared. The formula employed and the method of preparation varies greatly with the different manufacturers. Examination of the analyses shows very little uniformity of composition. The amount of residue on evaporation varies from 3 to 20 per cent. and the sucrose content from nothing to 8.44 per cent. Since a sweet drink is desired, many of the manufacturers resort to the use of saccharin to develop this taste, since saccharin is much less expensive than sugar and is not fermentable but is in itself a preservative. The use of saccharin is condemned by most medical authorities and all food experts. It was formerly much used by canners and packers of vegetables, such as tomatoes, sweet corn, etc., but at the present time it is no longer employed by reputable manufacturers. It has no place in the manufacture of a summer drink and its use should be discontinued. One sample was preserved with salicylic acid and one was colored with dinitroresol.

## GINGER ALES.

Laboratory Number.	Brand.	Manufacturer.	Specific Gravity at 20° C.	Alcohol, gms. per 100 c. c.	Extract gms. per 100 c. c.	Ash, gms. per 100 c. c.	Acids.		Polarization.		Saccharin.	Benzoate Soda.	Salicylate Soda.
							Total, as Citric.	Volatile, as Acetic.	Direct.	Invert.			
4232	Aromatic.....	C. Habich Co., Indianapolis.....	1.0407	.14	10.8	.025	.21	.006	+29.8	-11.6	8.04	None	None
4235	Delatour.....	Klee & Coleman, Indianapolis.....	1.0135	.21	3.51	.064	.21	.012	+2.8	-3.1	0.0	None	None
4243	Richelleu.....	Acklen C. Schuyler, New York.....	1.0348	.00	10.03	.028	.21	.000	+4.4	-11.6	3.10	None	None
4271	Ginger Ale.....	Sprague, Warner Co., Chicago.....	1.0671	.00	9.45	.013	.15	.000	+21.4	-18.0	7.60	None	None
4278	Walsh, Boyle & Co., Chicago.....	Walsh, Boyle & Co., Chicago.....	1.0190	.00	14.03	.120	.17	.006	+6.6	-14.7	4.16	None	None
4331	Graun Bottling Works, Indianapolis.....	Graun Bottling Works, Indianapolis.....	1.0100	.07	2.86	.032	.14	.016	+7.4	-1.3	1.63	None	None
4335	Yunccker Bottling Works, Indpls.....	Yunccker Bottling Works, Indpls.....	1.0350	.10	9.35	.032	.18	.000	+33.4	-10.3	8.49	None	Pres.
4347	Imperial.....	J. Metzger Co., Indianapolis.....	1.0279	.21	7.53	.058	.28	.012	+15.0	-8.3	4.53	None	None
4347a	Aquos.....	Aquos Dist. Water Co., Indianapolis.....	1.0270	.07	9.74	.007	.20	.006	+10.8	-7.3	3.68	None	None

**MISCELLANEOUS FRUIT BEVERAGES.**

Three of the four ciders analyzed were preserved with either benzoic or salicylic acid and the fourth sample was entirely artificial; three of the five grape juices contained sulfurous or salicylic acid. Of the four lime juices examined three were of full strength and free from preservatives. Of the four root beers analyzed three were free from preservatives, saccharin or glucose. One of the samples contained 40.96 milligrams of  $\text{SO}_2$  per liter, which had evidently been added as an antiseptic.

## ORANGE CIDER.

Laboratory Number.	Brand.	Manufacturer.	Specific Gravity, 20° C.	Extract, g. per 100 c. c.	Ash, g. per 100	Total Acid, as Citric.	Volatile Acid.	Polarization.		Sucrose, g. per 100 c. c.	Immersion Refr. Reading.	Benzoin of Soda.	Salicylate of Soda.	Saccharin.	Color.
								Direct.	Invert.						
4235	California ...	Klee & Coleman, Indianapolis...	1.0223	6.08	.087	.40	.033	+ 7.4	- 6.6	2.70	37.5	None...	None...	Present.	Coal-tar dye
4236	Crystal.	Pure Water Co., Berkly, Cal.	1.0540	13.78	.040	.05	.025	-10.0	-10.3	.05	69.4	None...	Present.	None...	Coal-tar dye
4237	Orange Cider.	Klee & Coleman, Indianapolis...	1.0383	9.80	.060	.43	.014	+16.4	-10.3	5.00	53.0	None...	None...	Present.	Coal-tar dye
4320	Orange Cider.	Grau Bottling Works, Indpls.	1.1104	3.92	.031	.10	.001	+13.6	- 4.0	3.40	29.9	None...	None...	Present.	Coal-tar dye
4333	Orange Cider.	Yuncle Bottling Works, Indpls.	1.0425	10.85	.035	.13	.001	+36.4	- 4.8	8.00	57.8	None...	None...	Present.	Coal-tar dye
4348	Orange Cider.	Jacob Metzger Co, Indianapolis.	1.0 65	15.31	.075	.53	.020	+26.2	-15.6	10.40	71.1	None...	None...	None...	Coal-tar dye

## CIDERS—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Sp. Gr. 20° C.	Acids.		Polarization.		Alcohol.	Per Cent. Sucrose.	Milligrams 80, per liter.	Extract per 100 c. c.	Salicylic Acid.	Benzoic Acid.	Saccharin.	Ash, grams per 100 c. c.	Alkalinity per 100 c. c. in 10 H Cl.	Remarks.
					Total as Malic.	Volatile as Acetic.	Direct.	Invert.										
4253	Extra Dry.	Hirsch Bros., Louisville	Indpls.	1.0553	.21	.021	-32.6	-33.8	.....	14	13.20	.....	.....	.....	.....	.331	32	Adulterated with benzoic acid.
4281	Duffy's.	American Fruit Produce Co., Rochester, N. Y.	Indpls.	1.0527	.49	.030	-31.2	-31.0	.....	14	12.70	.....	.....	.....	.....	.285	30	Adulterated with benzoic acid. Artificial.
4342	.....	J. Metzger Co., Indpls.	Indpls.	1.0450	.14	.003	+27.0	-14.0	8.03	.....	12.20	.....	.....	.....	.....	.....	.....	.....
4352	.....	S. R. & T. C. Mott, New York City	Indpls.	1.0510	.11	.024	-34.0	-16.2	.....	26	14.86	.....	.....	.....	.....	.317	37	Adulterated with salicylic acid.

## LIME JUICES—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Sp. Gr.	Acids.			Polarization.		Per Cent. Sucrose.	Milligrams SO <sub>2</sub> per liter	Extract per 100 c. c.	Salicylic Acid.	Benzoic Acid.	Saccharin.	Ash, grams per 100 c. c.	Alkalinity <sup>10</sup> HCl. per 100 c. c.	Remarks.
					Alcohol.	Citric.	Acetic.	Direct.	Invert.									
4222	Rose's Brand ....	W. A. Ross & Bro., Belfast, Ireland.	India 'polis.	.....	.....	5.40	.024	0.0	.....	.....	13	.....	.....	.....	.....	.....	.....	Pure.
4245	Montserrat.	Evans Sons & Co., Liverpool, Eng.	India 'polis.	.....	.....	8.40	.260	0.0	.....	.....	7	.....	.....	.....	.....	.....	.....	Pure.
4351	Lemon Juice .....	C. C. Brandt & Co., San Diego, Cal.	India 'polis.	.....	.....	8.13	.250	0.0	.....	.....	26	.....	.....	.....	.....	.....	.....	Pure.

## LIME JUICES—ILLEGAL.

3753	Rose .....	L. Rose & Co., London, Eng.	India 'polis.	.....	5.30	.060	0.0	.....	.....	.....	104	6.465	.....	.....	.....	2.38	.....	Adulterated with sulphurous acid.
------	------------	--------------------------------	---------------	-------	------	------	-----	-------	-------	-------	-----	-------	-------	-------	-------	------	-------	-----------------------------------

## GRAPE JUICES—LEGAL.

Laboratory Number	Brand	Manufacturer	Where Collected	Sp. Gr.	Acids			Polarisation		Per Cent. Sucrose	Kxtra t per 100 c. c.	Salicylic Acid	Benzoic Acid	Saccharin	Ash, grams per 100 c. c.	Alkalinity <sup>n</sup> per 100 c. c.	Remarks
					Alcohol	Tartaric	Acetic	Direct	Invert								
3890	Robertson's	Layton Vinegar Co.	India 'polla.	1.0761 0.0	1.075 .11			-14.0	-7.5	5.12	8.90	—	—	—	.27	.....	Pure.
4444	Fremont Grape Juice Co., Fremont, Ohio.	India 'polla.	1.0726 .07	1.28 .012				-23.2	-20.7	31.0	20.46	—	—	—	.266		Pure.

## GRAPE JUICES—ILLEGAL.

1442	Concord	Fremont Grape Juice Co., Fremont, O. ....	Huntington	1.0765 .14	.75 .012			-22.0	-22.2	...	20	18.76	+	—	.27	24	Adulterated with salicylic acid.
3765	Catawba	Purity Bottling Co., Cincinnati, O.	India 'polla.	1.0779 .28	1.70 .048			-26.0	-25.9	...	405	18.81	—	—	.23	20	Adulterated with sulphurous acid.
4370	P. B. Co.	Purity Bottling Co., Cincinnati, O.	India 'polla.	1.0693 .42	.89 .114			-28.4	-27.9	...	82	16.70	—	—	.35	23	Adulterated with sulphurous acid.



## ROOT BEERS LEGAL.

Brand.	Manufacturer.	Where Collected.	Sp. Gr.	Immer- sion Reading.	Polarization	Acids	Alcohol	Water	Residue	Remarks
444	Blanke's Tonics....	C. F. Blanke & Co., St. Louis, Mo.	1.072	...	4 8	7 0	1 07	...	...	...
4275	Hires.....	The Chas. Hires Co., Malvern, Pa.	1.072	14 9	7 6	8 8	0 20	12 7 000	000 10 20	...
4276	Hires.....	The Chas. Hires Co., Malvern, Pa.	1.077	0 0	22 0	18 0	0 14	303 20 08	207 10 0	...
4280	Richelieu...	Sprague, Warner & Co., Chicago, Ill.	1.0803	14 5	14 0	11 6	0 16	380 14 08	109 7 08	...

## CARBONATED SOFT DRINKS.

Included under this title is a variety of products made by the use of various syrups and carbonated water. Some of them are plain sugar syrups flavored with lemon or vanilla. Others purport to be made from fruit syrups, such as strawberries, raspberries, etc. Still others sold as tonics contain various root extracts. While the composition of these drinks varies widely, yet one fact is very noticeable—nearly all of them contain large quantities of saccharin and very small quantities of cane sugar. No preservatives were present in any of the samples; indeed, the large amount of saccharin used obviated the necessity for sugar syrup and of itself assisted in arresting fermentation. The analyses of these samples are given in full for the purpose of supplying data concerning the much used summer drinks.

## CARBONATED SOFT DRINKS.

Laboratory Number.	Brand.	Manufacturer.	Specific Gravity at 20° C.	Alcohol, c.c. per 100 c.c.	Extract, gms. per 100 c.c.	Ash, gms. per 100 c.c.	Total Acids, as Citric.	Volatile Acids.	Polarization.		Guarose, gms. per 100 c.c.	Innerness.		Preservatives.			Color.
									Direct.	Invert.		Sample.	Ultraviolet.	Benzosulfonate of Soda.	Balsam of Soda.	Baccharin.	
4215	No label.....	Klee & Coleman, Indianapolis.....	1.0362	.07	1.54	.043	.13	.006	0.0	0.0	0.0	25.5	—	None.	None...	Present.	
4217	No label.....	Aquas Water Co., Indianapolis.....	1.0493	.07	2.67	.033	.06	.018	+11.6	-3.5	3.00	16.1	—	None.	None..	None...	
4220	Club Soda.....	Cantrell & Cochrane, Dublin and Belfast, Ireland.....	1.0000	.00	.13	.058	.04	.000	0.0	0.0	0.0	14.9	—	None.	None...	None...	
4328	Raspberry.....	Klee & Coleman, Indianapolis.....	1.0106	.00	2.87	.070	.14	.006	+6.2	-3.5	1.44	24.4	—	None.	None...	Present.	Coal tar Dye.
4332	Lemon Soda....	Grau Bottling Works, Indianapolis.....	1.0093	.07	2.538	.027	.15	.003	+8.0	-2.6	2.0	23.9	14.9	None.	None.	Present.	
4336	Lemon.....	Yunker Bros., Indianapolis.....	1.0398	.00	10.96	.032	.11	.006	+39.4	-11.3	9.86	25.0	—	None.	Present.	None...	
4337	Iron Brew.....	Yunker Bros., Indianapolis.....	1.0325	.14	9.739	.020	.11	.001	+22.8	-9.7	8.1	49.2	15.0	None.	None...	None...	
4338	Strawberry Pop.	Yunker Bros., Indianapolis.....	1.0374	.00	11.335	.024	.14	.006	+41.0	-11.3	10.16	56.2	—	None.	None...	None...	
4339	Peach Bounce	Klee & Coleman, Indianapolis.....	1.0101	.00	2.652	.057	.10	.003	-2.0	-2.6	.10	21.0	14.8	None.	None...	Present.	Coal-tar Dye.
4240	Soda.....	Grau Bottling Works, Indianapolis.....	1.0093	.00	2.435	.021	.30	.004	+8.6	-2.2	2.1	23.4	14.8	None.	None...	Present.	
4344	Pop.....	J. Metzger, Indianapolis.....	1.0093	.14	2.412	.067	.16	.012	+14.4	-7.0	4.15	34.5	—	None.	None...	Present.	Coal-tar Dye.
4345	Pop.....	J. Metzger, Indianapolis.....	1.0230	.00	6.236	.060	.23	.003	+19.6	-6.6	5.00	36.9	14.8	None.	None...	Present.	Caramel.
4346	Pop.....	J. Metzger, Indianapolis.....	1.0226	.07	5.997	.075	.34	.001	+20.4	-6.6	5.2	37.2	14.9	None.	None...	Present.	
4360	Cream Soda....	Klee & Coleman, Indianapolis.....	1.0131	.14	3.412	.067	.15	.001	+3.6	-2.6	1.2	27.0	16.0	None.	None...	Present.	Coal-tar Dye.
4391	Fruit Soda.....	J. Metzger, Indianapolis.....	1.0215	.14	5.766	.066	.29	.001	+17.4	-5.7	4.5	35.0	15.0	None.	None...	Present.	
4392	Coca Cola.....	Coca Cola Co., Atlanta, Ga.....	1.0276	.00	6.490	.066	.12	.006	+2.8	+0.8	0.4	42.3	—	None.	None...	Present.	
4330	Sarsaparilla Pop.	Grau Bottling Works, Indianapolis.....	1.0108	.14	2.817	.025	.27	.003	+8.0	-8.8	3.0	25.0	15.0	None.	None...	Present.	Caramel.
4284	Sarsaparilla Pop.	Klee & Coleman, Indianapolis.....	1.0147	.28	3.85	.068	.13	.004	+8.4	-2.6	2.1	29.7	15.0	None.	None...	Present.	
4257	Iron Brew.....	Aquas Water Co., Indianapolis.....	1.0090	.21	2.77	.022	.00	.000	+4.4	-3.0	1.43	25.2	—	None.	None...	Present.	
4268	Fruit Malt.....	Crown Ext. and Cordial Co., New York.....	1.3050	1.36	33.51	.370	1.43	.046	+61.6	-51.48	14.08*	97.6	16.5	None.	None...	Present.	

\*Maltose.

## VINEGARS.

*Cider.*—It has many times been asserted by those engaged in enforcing pure food laws that vinegars are subject to adulteration to an extent perhaps greater than is the case with any other article of food.

Analyses of samples of vinegar collected from every part of Indiana offer good evidence, that, in this State, at least, the statement is not overdrawn.

Two hundred and thirty-nine samples of cider vinegar were analyzed and 187 were found to be adulterated.

Of adulterated samples 157 were artificial and 30 were below the standard required for cider vinegars, in acidity or solids, or both.

The striking fact to be noticed in the summary of results is that nearly 80 per cent. of the vinegars examined were adulterated, a finding which is remarkable in view of the fact that our State is well able to make every gallon of vinegar consumed within it. The home product is displaced by the artificial, acetic acid solution, colored with caramel, to the loss of the farmer or local manufacturer, and the defrauding of the consumer who pays cider vinegar prices for a cheap, spurious product, lacking all the peculiar aroma and delicate flavor which has given cider vinegar its reputation.

When the standard of acidity and solids is fixed all vinegars which do not come up to the standard are adulterated, and the manufacturer or dealer in such an article is liable for violation of the pure food laws. The practice of saving the first pressing from apple pomace for cider and then wetting down the exhausted cheese with water before a second pressing produces a diluted cider which is low in solids and malic acid and which will never make good vinegar. Imperfect acetification is regularly met with. In such cases the vinegar has not been sufficiently aged or has been kept out of access to air. The oxidation of alcohol to acetic acid can only take place in the presence of a liberal supply of oxygen, and vinegar makers should not expect that cider put into a cool cellar in unvented barrels will make vinegar.

The quality of a vinegar is sometimes injured by an abnormal fermentation or the development of moulds, or by the presence of

vinegar eels (*Anguillula Oxophila*). Foreign substances are occasionally accidentally introduced into vinegar which injure its color or render it injurious to health. The common practice of using as a funnel a wooden bucket with a lead tube or of employing a lead spigot, leads to the formation of sugar of lead (lead acetate), which is an active poison.

The manufacturers of artificial vinegars are all located outside the State where we have been unable to reach them except by correspondence. The business methods of some of these firms are nefarious, and the opportunity that will be given us under the new Federal law for keeping products of such firms off our markets, will afford us a welcome relief. One firm in particular, the "Red Cross Cider & Vinegar Co.," of St. Louis, has been a persistent violator of the law. Their method has been to send a salesman through the state offering to sell a quantity of cider vinegar at a price somewhat below the market price, and to throw in one barrel with every six purchased. A guarantee of purity is pasted on every barrel which covers the entire head and reads thus:

#### "NOTICE.

We will forfeit \$100.00 for every barrel of vinegar bearing this certificate that is not the product of pure apple juice. This vinegar is pure, fermented apple juice and is warranted to more than fill the requirements of the pure food laws.

The Red Cross Vinegar Co."

This guarantee and the strong assertion of the salesman has convinced many dealers that their goods were genuine. In fact in some instances the first few barrels shipped have been pure, although the last consignment was invariably a fictitious article. These artificial vinegars, while formerly simply colored distilled vinegar, are now very skillfully made; the dealers, starting with a distilled stock, add apple solids, salts of potash, malic acid, phosphoric acid, or some other substance that produces a heavy precipitation with lead acetate; sugars, colors and flavoring essences, until their blend not only resembles cider vinegar in appearance and flavor, but has most of its chemical characteristics. It is impossible for the honest manufacturer or dealer in cider vinegar to compete with these spurious articles.

## CIDER VINEGAR—LEGAL

Laboratory Number.	Brand.	Manufacturer or Retailer.	Where Collected.	Acidity as Acetic Acid.	Solids.	Ash.	Alkalinity of Ash.	Polarization.	Lead Acetate Precipitate.	Color.
4010	Cider Vinegar	Red Cross Vinegar Co., St. Louis	Indianapolis	9.09	2.34	322	32	1.2	Normal	Normal
4100 <sup>2</sup>	Pure Cider	Kothe, Wells & Bauer, Indianapolis	Indianapolis	4.10	1.53	.034	12	+0.0	Normal	Normal
4134	Pure Cider	A. H. Perfect & Co., Ft. Wayne	Ft. Wayne	4.34	2.27	.27	32	4.0	Mod'te	Normal
4260	Cider	Red Cross Vinegar Co., St. Louis	Indianapolis	4.14	2.45	.28	22	+0.0	V. Sl.	Normal
4261	Cider	Red Cross Vinegar Co., St. Louis	Indianapolis	4.14	2.44	.277	24	-6.0	V. Sl.	Normal
4291	Pure Cider	Red Cross Vinegar Co., St. Louis	Indianapolis	4.16	2.59	.350	30	8	V. Sl.	Normal
4345*	Cider Ky. Belle	Price & Lucas, Louisville	Indianapolis	4.22	6.63	.141	8	-11.0	Normal	Normal
4368	Pure Cider	Kothe, Wells & Bauer, Indianapolis	Indianapolis	4.10	2.00	.290	28	8	Normal	Normal
4398	Pure Cider	Geo. Blue, Indianapolis	Indianapolis	4.24	6.04	.50	42	-3.2	Normal	Normal
4400	Pure Cider	G. E. Bursley & Co., Ft. Wayne	Ft. Wayne	4.86	2.11	.264	26	8	Normal	Normal
4480	Pure Cider	Heinz, Pittsburgh	Indianapolis	4.86	2.48	.291	24	8	Normal	Normal
288	Gold Seal	Schnull & Co., Indianapolis	Indianapolis	4.28	2.58	.283	32	8	Normal	Normal
31	Pure Apple Cider	J. H. & B. Amt Co., Indianapolis	Martinsville	4.54	2.510	.349	38	4	Heavy	Not col.
33	Pure Apple Cider	Williams Bros. Co., Detroit	Indianapolis	4.82	2.420	.338	24	1.2	Mod'te	Not col.
49	Tarragon	Reid-Murdock, Chicago	Franklin	5.32	3.157	.580	24	2.0	Heavy	T. V. col.
65	Pure Apple Cider	Webb-Phillips Co., Chicago	Wood	4.40	2.625	.310	28	4.0	Heavy	Not col.
121	Pure Apple Cider	H. J. Heinz Co., Pittsburgh	Muncie	5.04	2.764	.325	32	3.4	Heavy	Not col.
1450	Pure Apple Cider	H. E. Binsley, Ft. Wayne	Huntington	4.87	2.940	.310	24	6	Heavy	Not col.
1577	Pure Apple Cider	Hirsch Bros., Louisville	Terre Haute	4.12	3.100	.375	34	-1.1	Heavy	Not col.
1375	Pure Apple Cider	Albion Cider & Vinegar Co., Albion, N. Y.	Franklin	4.35	2.910	.370	40	8	Heavy	Not col.
1472	Apple	A. Brown & Co., Evansville	Boonville	4.40	2.935	.365	40	8	Heavy	Not col.
1562	Cider	S. R. & J. C. Mott, New York	Jedersville	4.17	2.172	.283	28	8	Slight	Not col.
3875	Pure Cider	H. J. Heinz & Co., Pittsburgh	Jedersville	4.59	2.476	.284	32	-3.2	Heavy	Not col.
3821	Pure Cider	H. J. Heinz & Co., Pittsburgh	Indianapolis	4.74	2.160	.185	27	-2.0	Heavy	Not col.
3827	Salad	Schnull & Co., Indianapolis	Bloomington	5.98	2.200	.315	30	-1.1	Heavy	Not col.

\*An abnormal vinegar. ‡Low in solids. †Tarragon vinegar.

## CIDER VINEGAR—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Acidity as Acetic Acid.	Solids.	Ash.	Alkalinity of Ash.	Polarisation.	Lead Acetate Precipitate.	Color.	Remarks.
4858	Cider.....	Kothe, Wells & Bauer.....	Indianapolis.....	4.67	2.044	.290	24.	+0.0	Heavy.	Normal.	Pure.
4871	Cider.....	C. H. Rinne, Indianapolis.....	Indianapolis.....	4.48	1.883	.316	23	+0.0	Heavy.	Normal.	Pure.
4872	Cider.....	Heinz Co., Pittsburg.....	Indianapolis.....	5.28	2.500	.365	34	-1.8	Heavy.	Normal.	Pure.
4967	Ko-We-Ba	Kothe, Wells & Bauer.....	Knightsdown.....	4.66	2.158	.372	-	+0.0	Heavy.	Normal.	Pure.
4966	Cider.....	Crutskank, Alleghany, Pa.....	Indianapolis.....	4.83	2.831	.383	23.	-1.8	Heavy.	Normal.	Pure.
4994	Cider.....	Hirsch Bros., Louisville.....	Indianapolis.....	4.00	2.023	.369	23.	+0.0	Heavy.	Normal.	Pure.
5042	Cider.....	Sprague-Warner Co.....	Crawfordsville.....	4.38	2.056	.468	34.	-	Heavy.	Normal.	Pure.
5068	Cider.....	Amt & Co., Indianapolis.....	Indianapolis.....	4.60	3.179	.459	30	-	Heavy.	Normal.	Pure.
5214	Cider.....	A. H. Perfect & Co.....	Ft. Wayne.....	4.01	2.184	.235	32.	+0.0	Heavy.	Slight.	Pure.
5241	Cider.....	....., Toledo, Ohio.....	Muncie.....	4.40	2.211	.240	23.	+0.0	Heavy.	Normal.	Pure.
5763	Cider.....	....., Toledo, Ohio.....	Indianapolis.....	4.20	2.095	.268	26.	-2.0	Heavy.	Normal.	Pure.
5885	Cider.....	Molerling Co., Ft. Wayne.....	Indianapolis.....	4.37	2.578	.293	12.	-1.0	Medium	Normal.	Pure.
6031	Cider.....	John Luke, Mulberry.....	Goshen.....	4.80	2.571	.432	44.	-2.0	Heavy.	Normal.	Pure.
6078	Cider.....	Cruch & McConnell, Toledo, Ohio.....	Elkhart.....	4.37	2.077	.250	22.	+0.0	Heavy.	Normal.	Pure.
6286	Pure Apple Cider.....	Reid, Murdock & Co., Chicago.....	Terre Haute.....	4.48	2.324	.295	24.	-	Medium	Normal.	Pure.
6297	Cider.....	Reid, Murdock & Co., Chicago.....	South Bend.....	4.63	2.695	.192	30.	-2.8	Slight.	Normal.	Pure.
6320	Cider.....	National Grocery, South Bend.....	Michigan City.....	4.63	2.695	.326	32.	-3.8	Heavy.	Normal.	Pure.
6543	Cider.....	King Coffee Co., Benton Harbor, Mich.....	Indianapolis.....	4.00	2.155	.300	30.	+0.0	Heavy.	Normal.	Pure.
4602	Cider.....	Roanoke Vinegar Works.....	Huntington.....	6.57	6.35	.652	44.	-6.2	Heavy.	Normal.	Pure.
4594	Cider.....	.....	.....	4.86	2.37	.318	22.	+0.0	Heavy.	Normal.	Pure.

## CIDER VINEGAR—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Acidity as Acetic Acid.	Solids.	Ash.	Alkalinity of Ash.	Polarisation.	Precipitate With Lead Acetate.	Color.
23	Pure Cider.....	Grocers' Supply Co., Indianapolis.....	Columbus.....	4.14	.943	.065	.....	+2.0	None.....	C. W. C.
24	Guaranteed Table Vinegar.....	Grocers' Supply Co., Indianapolis.....	Franklin.....	3.86	.156	.02	.....	+5.6	None.....	C. W. C.
25	Gold Seal.....	J. H. & B. Amt Co., Indianapolis.....	Franklin.....	4.14	.185	.026	.....	+1.1	Mod.....	C. W. C.
27	Pure Apple Cider.....	Schnull & Co., Indianapolis.....	Franklin.....	3.93	2.116	.350	27	+1.9	Mod.....	Not col.
35	Pure Apple Cider.....	.....	Anderson.....	4.02	.253	.040	.....	+	Heavy.....	C. W. C.
66	Salad Cider.....	.....	Elwood.....	4.50	1.893	.320	32	+4.4	Heavy.....	Not col.
82	Old Kentucky.....	Hirsch Bros. & Co., Louisville.....	Alexandria.....	4.57	.250	.050	.....	0.0	None.....	C. W. C.
93	Pure Apple Cider.....	Robinson, Benton Harbor.....	Alexandria.....	4.50	1.160	.205	14	+7.7	Mod.....	C. W. C.
95	Pure Apple Cider.....	Robinson, Benton Harbor.....	Alexandria.....	3.81	.430	.057	.....	+1.5	Sl. tur.....	C. W. C.
100	Pure Apple Cider.....	J. A. Goddard, Muncie.....	Alexandria.....	4.30	1.150	.200	12	0.0	Mod.....	Not col.
120	Pure Apple Cider.....	Grocers' Supply Co., Indianapolis.....	Muncie.....	4.40	1.900	.20	6	+3.0	Heavy.....	C. W. C.
123	Pure Apple Cider.....	Best Sons & Co., Muncie.....	Muncie.....	3.65	.500	.063	.....	+2.9	None.....	C. W. C.
138	Cider Vinegar.....	Henry Mohr, Brazil.....	Muncie.....	3.22	.663	.125	.....	+	None.....	C. W. C.
144	Pure Apple Cider.....	Hulman & Co., Terre Haute.....	Brazil.....	4.08	.146	.177	18	0.0	Slight.....	Not col.
147	Old Homestead.....	Price & Lucas, Louisville.....	Brazil.....	3.61	.625	.118	.....	0.0	None.....	C. W. C.
151	Jos Strong & Co.'s Pure Cider.....	Terre Haute Coffee & Spice Co.....	Brazil.....	3.60	.680	.145	.....	0.0	None.....	Not col.
153	Hirsch's Fox.....	Terre Haute Coffee & Spice Co.....	Brazil.....	3.88	1.369	.178	14	+2.1	Heavy.....	C. W. C.
237	Golden.....	Hulman & Co., Terre Haute.....	Brazil.....	3.32	.360	.105	.....	+8.8	Mod.....	C. W. C.
264	Pickling.....	Hirsch Bros., Louisville.....	Terre Haute.....	3.76	.314	.065	.....	+1.1	None.....	C. W. C.
276	Cider Vinegar.....	Hirsch Bros., Louisville.....	Terre Haute.....	4.34	.365	.090	.....	+5.5	None.....	C. W. C.
306	Cider.....	J. C. Perry, Indianapolis.....	Martinville.....	4.07	.208	.035	.....	+6.6	None.....	C. W. C.
314	Family Cider.....	Louisville Cider & Vinegar Co.....	Martinville.....	3.58	.315	.055	.....	+7.8	None.....	C. W. C.
316	Pure Pickling.....	Grocers' Supply Co., Indianapolis.....	Martinville.....	4.13	.350	.027	.....	+7.7	None.....	C. W. C.
324	Pure Cider.....	Louisville Cider & Vinegar Co.....	Martinville.....	3.85	.290	.025	.....	+2.4	None.....	C. W. C.
328	Cider Vinegar.....	Louisville Cider & Vinegar Co.....	Terre Haute.....	3.61	.200	.100	.....	+1.2	None.....	C. W. C.
343	Cider.....	Jno. Bey, Vincennes.....	Terre Haute.....	3.76	.444	.028	.....	+1.2	None.....	C. W. C.
347	Cider Vinegar.....	Todd & Co., Vincennes.....	Vincennes.....	4.50	.234	.035	.....	+5.2	None.....	C. W. C.
354	Cider Vinegar.....	Jno. N. Bey, Vincennes.....	Vincennes.....	4.58	.250	.035	.....	+5.2	None.....	C. W. C.
359	Pure Cider Vinegar.....	Jno. N. Bey, Vincennes.....	Vincennes.....	3.36	2.044	.150	12	+3.6	None.....	Sl. C. W. C.
364	Pure Cider Vinegar.....	Hirsch Bros., Louisville.....	Vincennes.....	3.51	.250	.037	.....	+5.2	None.....	C. W. C.
378	Pure Apple Cider Vinegar.....	Jno. N. Bey, Vincennes.....	Vincennes.....	3.76	.208	.028	.....	+1.8	None.....	C. W. C.
386	Pickling.....	Williams Bros., Detroit.....	Vincennes.....	3.76	.208	.028	.....	+1.8	None.....	C. W. C.
391	Pure Apple Cider.....	Hirsch Bros., Louisville.....	Vincennes.....	3.86	.238	.040	.....	+3.8	None.....	C. W. C.
396	Pure Apple Cider.....	Hirsch Bros., Louisville.....	Vincennes.....	4.36	.264	.062	.....	+3.8	None.....	C. W. C.
398	Pure Apple Cider.....	Red Cross Vinegar Co., St. Louis.....	Vincennes.....	3.54	.235	.033	.....	+1.0	None.....	C. W. C.

\* Colored with caramel.



## CIDER VINEGAR—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Acidity as Acetic Acid	Solids.	Ash.	Alkalinity of Ash.	Polarization.	Precipitate with Lead Acetate.	Color.
405	Cider Vinegar	J. D. Todd, Vincennes	Vincennes	4.02	255	.045	.....	+ 9	None	C. W. C.
409	Cider Vinegar	Hirsch Bros., Louisville	Vincennes	3.44	250	.026	.....	+ 6	None	C. W. C.
417	Pickling	Hirsch Bros., Louisville	Vincennes	3.44	292	.093	.....	+ 1.1	Sl tur	C. W. C.
420	Old Kentucky (colored)	C. Bierhaus & Sons, Vincennes	Washington	4.06	220	.044	.....	+ 6	Heavy	C. W. C.
432	Pure Apple Cider	C. C. Cushing & Co., St. Louis	Washington	3.98	1780	.280	26	-10	None	Not col
440	Improved	Sprague, Warner & Co., Chicago	Washington	4.68	.216	.028	.....	+ 6	Heavy	C. W. C.
445	Stauben Co	Hulman & Co., Terre Haute	Washington	3.92	1768	.323	34	-16	None	Not col
451	Golden	Hulman & Co., Terre Haute	Washington	3.85	250	.013	.....	+ 5	None	C. W. C.
456	Golden	C. C. Cushing & Co., St. Louis	Washington	3.52	195	.035	.....	+ 4	None	C. W. C.
469	Double Pure Cider	Red Cross Vinegar Co., St. Louis	Washington	3.50	250	.029	.....	+ 7	None	C. W. C.
472	Red Cross Belle	Rones Bros. & Co., Louisville	Oakland City	4.72	1690	.170	16	+ 6	Slight	Not col
1137	Blue Grass Belle	Rockport Vinegar Co., Rockport	Oakland City	4.02	2280	.023	.....	+ 4	None	C. W. C.
1180	Maiden Blush	St. Louis Vinegar Co., St. Louis	Oakland City	4.72	2280	.023	.....	+ 7	None	C. W. C.
1184	Madison Co	C. C. Cushing & Co., St. Louis	Princeton	3.56	.261	.040	.....	+ 6	None	C. W. C.
1201	Pure Apple	Parson & Scoville, Evansville	Princeton	4.03	2498	.207	15	-24	Slight	Not Col
1210	Apple Cider	Kagon Bros., Evansville	Princeton	3.43	.387	.025	.....	.....	None	C. W. C.
1213	Blue Grass Belle	Hirsch Bros., Louisville	Princeton	4.43	1500	.190	20	-12	Slight	C. W. C.
1231	Cushing Best	O. C. Cushing, St. Louis	Mt. Vernon	4.53	.216	.024	.....	+ 3	None	C. W. C.
1274	C. C. Cushing	O. C. Cushing, St. Louis	Mt. Vernon	3.92	.330	.023	.....	.....	None	C. W. C.
1274	Family	St. Louis Vinegar Co., St. Louis	Mt. Vernon	3.85	.283	.284	.....	-2.0	None	C. W. C.
1284	Pure Cider	Hirsch Bros., Louisville	Evansville	4.00	2025	.196	.....	-1.0	Slight	Not Col
1285	Pickling	Hirsch Bros., Louisville	Evansville	3.56	.281	.046	.....	+ 7	None	Not Col
1289	Cider	Hirsch Bros., Louisville	Evansville	3.66	.281	.046	.....	+ 7	None	C. W. C.
1349	Cider and Vinegar	Hirsch Bros., Louisville	Huntington	2.07	.350	.050	.....	+ 1.0	None	C. W. C.
1417	Pure Cider	Dowe & Snell, Toledo	Huntington	2.56	.185	.029	24	.....	Heavy	Not Col
1456	Pure Cider	W. M. Hoyt, Chicago	Huntington	2.10	.281	.039	88	-2.1	Heavy	Not Col
1465	Cider	Sherman Gee (farmer)	Booneville	2.14	.405	.082	86	+ 1.2	Heavy	C. W. C.
1492	Hoosier	Lewis Seltz Gro. Co., Evansville	Booneville	2.89	.241	.043	.....	-1.0	None	C. W. C.
1498	Old Home	Lewis Seltz Gro. Co., Evansville	Booneville	4.00	2100	.235	12	+ 1.0	None	Not Col
1511	Pure Cider	Wm. Fiebback, Evansville	Huntingburg	4.26	.253	.060	.....	+ 1.5	None	C. W. C.
1515	Pure Cider	Hirsch Bros., Louisville	Huntingburg	3.41	.326	.080	.....	.....	Mod	Not Col
1520	Pure Apple	Robinson C. & V. Co., Benton Harbor	Huntingburg	4.52	.185	.185	.....	+ 1.2	None	C. W. C.
1536	Pure Cider	Hirsch Bros., Louisville	Jeffersonville	4.91	.571	.000	.....	+ 1.0	Slight	C. W. C.
1549	Pure Family	Zimmerman & Bro., New Albany	Jeffersonville	2.93	.800	.045	.....	.....	None	C. W. C.
1556	Pickling	M. Kahn, Louisville	Jeffersonville	3.60	.220	.040	.....	.....	None	C. W. C.

Cider	Produce	Price	Quality	Quantity	Weight	Value	Notes
1561	Pickling	S. K. & J. C. Mott, Bouckville, N. Y.	Jeffersonville	3.96	2,796	308	Not Col
1562	Pickling	Hirsch Bros, Louisville	Jeffersonville	4.30	940	478	None
1563	Pickling	A. Holmes, Jeffersonville	Jeffersonville	3.89	290	491	None
1564	Pickling	A. Kahn, Jeffersonville	Jeffersonville	3.58	157	537	None
1565	Pickling	Hirsch Bros, Louisville	Jeffersonville	3.86	280	669	None
1566	Cider	Hirsch Bros, Louisville	New Albany	3.40	160	640	None
1567	Cider	Scheffel & Wheat, Louisville	New Albany	4.50	435	250	Not Col
1568	Cider	Price & Lucas C. & V. Co., Louisville	Salem	4.00	290	553	Not Col
1569	Cider	Knabler & Lucas, Louisville	Salem	6.48	285	643	Not Col
1570	Cider	W. D. Huffman, Indianapolis	Salem	4.49	180	665	Not Col
1571	Cider	Hirsch Bros, Louisville	Kokomo	3.84	325	127	W C
1572	Cider	Peru Wholesale Co., Peru	Kokomo	3.90	328	132	W C
1573	Cider	Reid, Murdoch & Co., Chicago	Kokomo	4.26	336	121	W C
1574	Cider	Louisville Preserve Co., Louisville	Kokomo	4.01	303	101	W C
1575	Cider	Huffman's, Indianapolis	Pt. Wayne	4.72	1,850	150	W C
1576	Cider	Faulkner & Webb Co., Indianapolis	Indianapolis	4.28	2,370	173	W C
1577	Cider	Amt & C., Indianapolis	Indianapolis	2.96	165	128	W C
1578	Cider	W. D. Huffman, Indianapolis	Indianapolis	4.03	185	125	W C
1579	Cider	W. D. Huffman, Indianapolis	Indianapolis	3.84	1,066	111	W C
1580	Cider	Miles Chem. Co., Indianapolis	Indianapolis	4.25	212	130	W C
1581	Cider	Stewart Thorne Co., Indianapolis	Indianapolis	3.58	215	145	W C
1582	Cider	Lacota C. & V. Co., Lacota, Mich	W. Ind'apolis	2.38	153	119	W C
1583	Cider	Miles Chem. Co., Indianapolis	Indianapolis	3.76	2,050	340	W C
1584	Cider	Crecent Preserve Co., Indianapolis	Indianapolis	3.76	250	123	W C
1585	Cider	Thatcher-Keller Co., Indianapolis	Indianapolis	3.98	236	120	W C
1586	Cider	Terre Haute Coffee & Spice Mills	Indianapolis	3.88	228	125	W C
1587	Cider	W. D. Huffman Co., Indianapolis	Indianapolis	3.89	200	124	W C
1588	Cider	W. D. Huffman Co., Indianapolis	Bloomington	4.14	1,648	206	W C
1589	Cider	W. D. Huffman, Indianapolis	Bloomington	3.91	377	148	W C
1590	Cider	Red Cross Vinegar Co., St. Louis	Bloomington	4.94	1,195	146	W C
1591	Cider	M. Kahn & Co., Louisville	Jeffersonville	3.92	240	187	W C
1592	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	4.41	615	104	W C
1593	Cider	Price & Lucas, Louisville, Ky	Kokomo	3.92	213	228	W C
1594	Cider	Price & Lucas, Louisville, Ky	Indianapolis	6.20	1,25	125	Caramel
1595	Cider	Price & Lucas, Louisville, Ky	Indianapolis	3.76	868	105	Caramel
1596	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1597	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1598	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1599	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1600	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1601	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1602	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1603	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1604	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1605	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1606	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1607	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1608	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1609	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1610	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1611	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1612	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1613	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1614	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel
1615	Cider	Price & Lucas, Louisville, Ky	Fort Wayne	3.83	1,87	20	Caramel

## CIDER VINEGAR—ILLEGAL—Continued.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Acidity as Acetic Acid.	Solids.	Ash.	Alkalinity of Ash.	Polarization.	Precipitate with Lead Acetate.	Color.
4290	Cider.		North Salem.	3.39	.020	.022	...	+6.	None	Caramel
4296	Pure Cider.		Indianapolis.	4.42	2.44	.165	8.	+4.6	Med.	Caramel
4312	Pure Cider.		Buflon.	3.85	2.07	.275	20.0	+8.	Heavy	Normal.
4314	Apple.	Price & Lucas, Louisville, Ky.	Indianapolis.	4.65	.207	.032	...	+1.0	None	Caramel
4349	Cider.	Red Cross Vinegar Co., St. Louis.	Indianapolis.	3.35	.205	.015	...	+0.0	None	Caramel
4353	Cider.	Red Cross Vinegar Co., St. Louis.	Indianapolis.	3.50	.21	.010	...	+1.0	None	Caramel
4355	H. Tank, No. 1		Indianapolis.	5.04	2.24	.232	19.	+1.6	...	Normal.
4367	No. 7.		Indianapolis.	2.17	2.96	3.70	30.	+0.0	...	Normal.
4370	Cider.		Logansport.	3.90	.263	.025	...	+ +	...	Caramel
4407	Pure Cider.		Hymers.	4.13	.233	.034	...	+ 4	...	Caramel
4453	Pure Cider.		Union City.	3.95	.238	.037	...	+ 0	...	Caramel

† Vinegar cells present.

## VINEGAR—ILLEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Acidity as Acetic Acid.	Solids.	Ash.	Alkalinity of Ash.	Polarisation.	Lead Acetate Precipitate.	Color.	Remarks.
4506	Pure Cider .....	Price & Lucas, Louisville, Ky.	Indianapolis..	4.51	1.57	.078	8.	-2.8	Slight..	Caramel	Artificial.
4540	Pure Cider .....	Red Cross Vinegar Co., St. Louis.	Noblesville...	3.51	.20	.020	—	+1.0	Slight..	Caramel	Artificial.
4661	Pure Cider .....	Red Cross Vinegar Co., St. Louis.	Portland.....	3.98	.277	.042	—	+3.6	V. slight	Caramel	Artificial.
4621	Pure Cider .....	Red Cross Vinegar Co., St. Louis.	Indianapolis..	4.20	.238	.013	—	+3.4	V. slight	Caramel	Artificial.
4704	Pure Cider .....	Red Cross Vinegar Co., St. Louis.	Indianapolis..	6.30	.599	.073	44.0	+5.6	Heavy..	Normal	Not normal
4882	Pure Cider .....	.....	Indianapolis..	3.88	.261	.087	—	+1.0	None...	Caramel	vinegar.
4889	Pure Cider .....	J. H. & B. Amt, Indianapolis	Indianapolis..	3.90	3.163	.338	28.	-1.8	Heavy..	Slight	Artificial.
4865	Pure Cider .....	Grocers' Supply Co., Indianapolis	Indianapolis..	4.90	2.578	.262	36.	+4.4	Heavy..	Caramel	Slightly below season.
4869	Pure Cider .....	Red Cross Cider & Vin. Co., St. Louis.	Indianapolis..	3.79	.261	.026	—	+1.0	None...	Caramel	Not genuine.
4873	Pure Cider .....	Faulkner & Co., Indianapolis	Indianapolis..	4.44	1.150	.009	—	-1.2	None...	Caramel	Artificial.
4937	Kentucky Belle	Price & Lucas, Louisville.	Indianapolis..	4.75	1.750	.044	—	+ .6	None...	Caramel	Adulterated.
4938	Pickle Cider .....	Huffman, Indianapolis.	Indianapolis..	4.09	.024	.023	—	+ .4	None...	Caramel	Below standard
4943	Pickle Cider .....	Amt & Co., Indianapolis	Indianapolis..	4.63	2.004	.036	30.	-1.0	Heavy..	Normal.	Artificial.
4952	Pickle Cider .....	H. Gibson, Knightstown	Knightstown..	1.97	.094	.222	16.	+ -0.0	Slight..	Normal.	Slightly below standard. Pure.
4954	Homestead .....	Price & Lucas, Louisville.	Knightstown..	3.62	.029	.034	—	+1.0	None...	Caramel	Pure.
4956	Old Homestead .....	Price & Lucas, Louisville.	Knightstown..	4.98	.035	.027	—	+0.0	None...	Caramel	Artificial.
4970	Cider .....	Price & Lucas, Louisville.	Knightstown..	3.61	.024	.046	—	+ .6	None...	Caramel	Artificial.
5014	Pure Cider .....	Vaughn & Casey, Crawfordsville.	Indianapolis..	3.46	.027	.028	—	+1.0	None...	Caramel	Artificial.
5043	Bayles Cider..	Geo. A. Bayle, St. Louis.	Crawfordsville.	4.06	.087	.038	—	+ .2	None...	Caramel	Artificial.
5069	.....	Price & Lucas, Louisville.	Indianapolis..	6.37	5.016	.123	6.	+9.6	Slight..	Normal.	Artificial.
5104	Old Homestead .....	Price & Lucas, Louisville.	Indianapolis..	4.68	.5767	.150	12.	-3.6	Slight..	Normal.	Artificial.
5166	Pure Cider .....	Red Cross Cider and Vin. Co., St. Louis	Columbus.....	4.00	.043	.188	10.	+1.0	Heavy..	Normal.	Artificial.
5229	Red Cross .....	Red Cross Cider and Vin. Co., St. Louis	Anderson.....	4.93	.0318	.018	—	+1.0	Slight..	Caramel	Artificial.
5294	Cider .....	Esex Co., Arcadia	Noblesville...	2.98	3.264	.363	38.	+ -0.0	Heavy..	Normal	Artificial.
5674	Red Cross .....	Red Cross Cider and Vin. Co., St. Louis	Marion.....	3.50	.0260	.021	—	+ .4	None...	Caramel	Below standard
5731	Pure Cider .....	Red Cross Cider and Vin. Co., St. Louis	Indianapolis..	.....	.....	.....	—	—	—	Caramel	Artificial.
5759	Pure Cider .....	Red Cross Cider and Vin. Co., St. Louis	Indianapolis..	.....	.....	.....	—	—	—	Caramel	Artificial.
5780	Pure Cider .....	Red Cross Cider and Vin. Co., St. Louis	Indianapolis..	.....	.....	.....	—	—	—	Caramel	Artificial.
5781	Pure Cider .....	Red Cross Cider and Vin. Co., St. Louis	Indianapolis..	.....	.....	.....	—	—	—	Caramel	Artificial.
5969	Cider .....	A. H. Perfect & Co., Ft. Wayne.	Ft. Wayne.....	6.10	.0175	.009	—	+ .8	None...	Caramel	Artificial.
5997	Cider .....	Williams Bros., Detroit.	Ft. Wayne.....	3.69	2.684	.117	13.	+ -0.0	Heavy..	Normal.	Low in acidity.

## VINEGAR—ILLEGAL—Continued.

Laboratory Number	Brand	Manufacturer	Where Collected	Acidity as Acetic Acid	Solids	Ash	Alkalinity of Ash	Polarization	Lead Acetate Precipitate	Color	Remarks
5916	Cider	Mollinger Bros., Ft. Wayne	Ft. Wayne	4.70	0.290	015	—	+ 8	None	Caramel	Artificial.
5927	Cider	Ft. Wayne	Ft. Wayne	6.13	2.886	050	—	+10.8	V. Sl.	Caramel	Artificial.
5940	Cider	Dun & Co., St. Louis	Ft. Wayne	3.83	1.629	050	45	+0.6	Heavy	Normal	Below standard
5946	Old Homestead	Price & Lucas, Louisville	Noblesville	3.71	1.325	104	22	-5.6	Heavy	Normal	Below standard
6019	Cider	W. J. M. Hess, Goshen	Goshen	1.65	1.157	212	22	-0.0	Heavy	Normal	Below standard
6038	Cider	W. J. Quan & Co., Chicago	Goshen	3.90	1.710	145	14	-1	Heavy	Normal	Below standard
6120	Cider	South Bend Grocery Co., South Bend	South Bend	4.61	0.945	200	18	-8	Heavy	Normal	Below standard
6151	Blue Grass Belle	Jones Bro. & Co., Louisville	Madison	3.72	2.350	327	24	+2.8	Heavy	Normal	Below standard
6159	Cider	J. G. Hitz	Madison	2.47	6.350	287	25	-5.2	Heavy	Normal	Below standard
6261	Extra Family Cider	Louisville Cider and Vinegar Co.	Brazil	4.72	0.337	065	—	+1.0	None	Caramel	Artificial.
6263	Genuine Old	Bement-Rea Co., Terre Haute	Brazil	4.42	0.512	103	12	+2.0	Slight	Normal	Artificial.
6272	Pure Cider, Guaran- teed	Bement-Rea Co., Terre Haute	Brazil	4.40	1.597	388	34	-0.0	Medium	Normal	Below standard
6281	Pure Cider, Guaran- teed	Robinson Cider and Vinegar Co., Benton Harbor, Mich	Terre Haute	4.11	1.120	366	28	-0.0	Heavy	Normal	Below standard
6382	Cider	Hirsch Bros., Louisville	Terre Haute	4.07	0.403	044	—	+1.2	None	Caramel	Artificial.
6393	Cider	Red Cross Cider and Vin. Co., St. Louis	Terre Haute	3.88	0.274	017	—	+1.6	None	Caramel	Artificial.
6395	Arco Apple Cider	Atwood-Steele Co., Chicago	Terre Haute	3.63	2.644	350	34	-2.0	Medium	Normal	Below standard
6398	Cider	Hoffman, Indianapolis	Terre Haute	4.45	1.097	224	16	+2.8	Medium	Normal	Below standard
6321	Cider	Dr. Southerlin, Laporte	Laporte	2.80	1.074	232	12	-0.0	V. Sl.	Normal	Below standard
6323	Cider	Robinson & Co., Benton Harbor	Laporte	4.33	0.808	168	16	+1.5	Heavy	Caramel	Artificial.
6350	Cider	New York Cider Co., St. Louis	Laporte	4.45	0.276	018	—	+1.2	None	Caramel	Artificial.
6137	Cider	Hen Helver, Plymouth	Plymouth	2.84	2.637	349	40	+2.4	Heavy	Normal	Below standard
6142	Elk's Pride	Bauer-Marlean Co., Toledo, Ohio	Rochester	3.89	2.045	241	20	-0.0	Heavy	Normal	Below standard
6175	Battle King	Huntington Grocery Co.	Rochester	4.37	2.811	300	28	+2.8	Heavy	Normal	Below standard
6534	Cider	Price & Lucas, Louisville	Michigan City	4.97	0.327	045	—	+0.2	None	Caramel	Artificial.
6571	Cider	W. F. Law, Chicago	Whiting	5.25	0.200	007	—	+1.0	None	Caramel	Artificial.
6606	Cider	Noblesville	Noblesville	1.83	4.450	400	44	-	—	Normal	Below standard

**MALT VINEGAR.**

The practice of selling colored distilled or spirit vinegar for a malt vinegar is very common. A charitable explanation of this violation of the law is that long continued trade in the imitation product has in a way fixed the name of "Malt" on the colored distilled vinegar, although it should be applied only to nondistilled goods made by the alcoholic and acetous fermentation of grain infusions.

Of the 20 samples of malt vinegar examined, but four were genuine malt vinegar, the rest were simply colored distilled vinegars.



#### GRAIN VINEGAR.

Grain vinegar is uncolored distilled vinegar. Ten of the 15 analyzed were illegal, either because of the addition of color or an acidity below the 4 per cent standard.



## GRAIN VINEGARS—LEGAL.

Laboratory Number.	Brand.	Manufacturer.	Where Collected.	Acidity as Acetic Acid.	Solids.	Ash.	Alkalinity of Ash.	Polarisation.	Lead Acetate Precipitate.	Color.	Remarks.
6254	Royal .....	Hulman & Co., Terre Haute .....	Brazil .....	3.67	0.243	.017	—	+1.2	None .....	Caramel .....	Prop'y labeled.
6259	Colored Distilled .....	Schnull & Co., Indianapolis .....	Brazil .....	5.34	0.269	.021	—	+0.0	None .....	Caramel .....	Prop'y labeled.
6274	Colored Distilled .....	Bunge & Co., Chicago .....	Brazil .....	4.34	0.240	.034	—	+2.0	None .....	Caramel .....	Prop'y labeled.
5984	Acetic White Distilled .....	Atwood, Steele & Co., Chicago .....	Greenacastle .....	4.55	none	none	—	+0.0	None .....	None .....	Legal.
6280	White Wine .....	A. Grate & Co., Terre Haute .....	Brazil .....	4.23	none	none	—	+0.4	None .....	None .....	Legal.

## GRAIN VINEGARS—ILLEGAL.

233	Cereal .....	W. D. Huffman, Indianapolis .....	Indianapolis .....	3.32	.220	.028	.....	+ .6	None .....	.....	*C. W. C.
428	Distilled (colored) .....	Bement & Seitz, Evansville .....	Washington .....	3.37	.919	.035	.....	+2.5	None .....	.....	C. W. C.
1159	Old Kentucky .....	Bement & Seitz, Evansville .....	Oakland City .....	3.59	1.070	.048	.....	+ .0	Slight .....	.....	C. W. C.
1187	Pickling colored, dist'd .....	Hirsch Bros., Louisville .....	Princeton .....	3.76	.275	.052	.....	+ .0	None .....	.....	C. W. C.
1206	Distilled .....	Bierhaus Bros., Vincennes .....	Princeton .....	3.83	.243	.052	.....	+ .4	None .....	.....	C. W. C.
1247	Pure Cereal .....	Amt & Co., Indianapolis .....	Mt. Vernon .....	3.00	.260	.046	.....	+ .5	None .....	.....	C. W. C.
1350	Cereal .....	Amt & Co., Indianapolis .....	Mt. Vernon .....	3.07	.300	.025	.....	+1.0	None .....	.....	C. W. C.

\* Colored with caramel.

## MISCELLANEOUS FOOD PRODUCTS.

Under this head is placed a variety of subjects such as obesity cures, soda fountain syrups, coffee essences, vegetable butters, sausage fillers, junket tablets, pudding preparations, table sauces, etc. Of the 80 articles of this class 17, or 21 per cent., were illegal.

## DRUGS.

Drugs are primarily intended for the cure of disease or the correction of abnormal conditions. While food adulteration is an economic fraud and rarely works an injury to the health of the consumer, the adulteration of drugs, either by lessening their strength or adding foreign ingredients, places in the hand of the physician an inferior article not adapted for the use to which it is put. When such drugs are used in the treatment of disease the adulteration becomes dangerous. A preparation of morphine may be prescribed by a physician for the relief of pain, the dose is fixed; if results are not forthcoming because of the adulteration or the weakening of the strength of the article, the dose is increased. When the bottle is empty the prescription may be refilled, this time with a full strength article. If the patient, thinking the drug is the same as before, takes a double dose, serious results will follow. Again, if the physician who prescribes a certain drug does not get the results he expects with his patient, he may change the prescription entirely, when all the fault may be due to an adulteration of the medicine in question. Certain classes of drugs are very liable to adulteration; indeed, some things which are pharmacopoeia preparations are rarely or never carried in stock by druggists as pure articles. This is true of black antimony, precipitated sulphur, and beeswax. Other goods frequently called for both by prescriptions and customers are very liable to be of inferior strength. The tinctures prepared by the dispenser we have found to be frequently below standard. The same is true of many of the extracts; on the other hand chemicals, such as potassium iodide, Rochelle salts, sodium phosphate, zinc sulphate, boric acid, cream of tartar, etc., are evidently not adulterated.

Two conditions operate against the sale of pure drugs. The first is the fault of the druggist himself who may either be unfamiliar

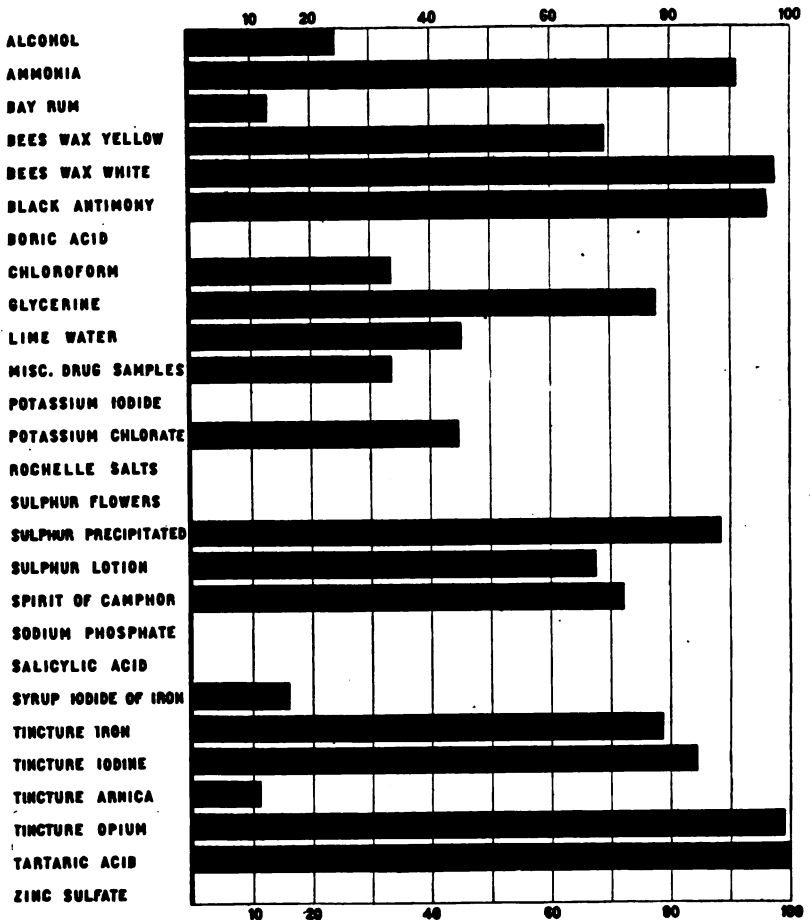
with the preparation of the articles he dispenses, or who delegates to boys or untrained clerks the preparation of medicines which can only successfully be produced by a skilled pharmacist. Secondly, the lack of care in the purchase of stock. While the wholesalers for the most part carry pure lines of goods, there are some concerns (fortunately for the honor of the drug trade in Indiana located outside the State), that make a practice of supplying low grade, cut rate drugs which they know to be impure when they sell them. The grocer may excuse the sale of adulterated goods on the plea that his customers want cheap things, but the druggist has no such excuse. Realizing that the preparations that he dispenses are to be used as medicine, usually by people not familiar with the drug they are taking, it becomes his duty to see that the drugs he sells are of normal strength and purity. The selling of patent medicines and fraudulent remedies which purport to be cures and relief for every disease, has never been regulated in Indiana. Enormous quantities of worthless mixtures of alcohol or bad whisky with caramel and bitters, or even preparations containing morphine, opium, heroin, cocaine and habit forming drugs, are sold without restriction. The use of cocaine is on the increase among the poorer classes, especially among the negroes. The habit is formed by the use of so-called catarrh cures which are, in fact, nothing but cocaine preparations put up and sold for the purpose of satisfying the cravings of the cocaine fiend. Fortunately for the people, the Federal Food and Drug Law which compels the placing on the label of every package containing alcohol, morphine, opium, cocaine, heroin, chloroform, chloral hydrate, and acetanilide, a statement of the quantity of such ingredients present, will make it clear to the purchaser what he is buying and will tend to suppress the manufacture and sale of a large number of worthless preparations. During the year there have been collected and analyzed 1,559 samples of drugs. Of this number 596 have been pure and 963, or 62.5 per cent., adulterated. This percentage of adulteration is very high and indicates either a demoralized drug market or extreme carelessness on the part of the druggist and dealer.

## RESULTS OF ANALYSIS OF DRUG SAMPLES.

ARTICLE EXAMINED.	Good.	Bad.	Total.	Per Cent. Adulterated.
Alcohol .....	100	32	132	24.2
Ammonia, Aqua Ammoniae .....	7	68	75	90.8
Bay Rum .....	68	10	78	12.9
Beeswax, yellow, Cera Flava .....	27	60	87	69.0
Beeswax, white, Cera Alba .....	2	67	69	97.1
Black antimony .....	2	41	43	95.8
Boric acid, Acidum Boricum .....	14	0	14	0.0
Chloroform .....	2	1	3	33.3
Glycerine, Glycerinum .....	14	48	62	77.4
Lime water, Liquor Calcis .....	91	75	166	45.1
Miscellaneous drug samples .....	10	5	15	33.3
Potassium iodide, Potassii Iodidum .....	7	0	7	00.0
Potassium chlorate, Potassii Chloras .....	5	4	9	44.4
Rochelle salts, Potassii et Sodii Tartras .....	4	0	4	00.0
Sulphur flowers .....	4	0	4	00.0
Sulphur precipitated, Sulphur Praecipitatum .....	17	124	141	88.0
Sulphur lotion .....	1	2	3	66.6
Spirit of camphor, Spiritus Camphorae .....	30	77	107	71.8
Sodium phosphate, Sodii Phosphas .....	7	0	7	00.0
Salicylic acid, Acidum Salicylicum .....	1	0	1	00.0
Syrup iodide of iron, Syrupus Ferri Iodidi .....	47	9	56	18.0
Tincture iron, Tinctura Ferri Chloridi .....	39	138	177	78.5
Tincture iodine, Tinctura Iodi .....	21	112	133	84.2
Tincture arnica, Tinctura Arnicae .....	72	9	81	11.0
Tincture opium, Tinctura Opii .....	1	80	81	98.9
Tartaric acid, Acidum Tartaricum .....	0	1	1	100.0
Zinc sulphate, Zinci Sulphas .....	3	0	3	00.0
<b>Total .....</b>	<b>596</b>	<b>963</b>	<b>1,559</b>	<b>62.5</b>

# PERCENTAGE OF ADULTERATION OF DRUGS IN INDIANA

YEAR ENDING OCTOBER 31, 1906



**ALCOHOL.**

Thirty-two of the 132 samples of alcohol analyzed were impure or below standard. In almost every case the alcohols were but slightly below the pharmacopoeia standard of 94.9 per cent. by volume. One sample only was diluted with water and in no case was methyl alcohol substituted for the grain alcohol purchased.

## PURE ALCOHOLS.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity at 15.5°C.	Alcohol by Volume.
609	Baur.....	Terre Haute.....	.8182	94.46
622	G. Reiss.....	Terre Haute.....	.8181	94.48
688	C. S. Miller.....	Vincennes.....	.8195	94.15
710	I. J. Biggs.....	Princeton.....	.8150	94.55
777	A. F. Schmidt.....	Washington.....	.8178	94.55
880	H. J. Schoepfer.....	Evansville.....	.8199	94.68
909	W. H. Fogus.....	Mt. Vernon.....	.8200	94.40
929	Dawson & Boyce.....	Mt. Vernon.....	.8185	94.38
944	D. & H. Rosenbaum.....	Mt. Vernon.....	.8199	94.38
968	Porter, the Druggist.....	Peru.....	.8189	94.38
987	Blue Drug Store.....	Peru.....	.8200	94.38
1001	Chickasaw Pharmacy.....	Peru.....	.8183	94.43
1016	Bradley Bros.....	Wabash.....	.8190	94.38
1120	J. C. Hutzell.....	Ft. Wayne.....	.8192	94.19
1158	Ranke & Nussbaum.....	Ft. Wayne.....	.8184	94.36
1174	Greier & Bro.....	Ft. Wayne.....	.8198	94.06
1190	H. G. Sommers.....	Ft. Wayne.....	.8195	94.13
1207	Meyer, Bros. & Co.....	Ft. Wayne.....	.8192	94.26
3631	Bowles Bros.....	Bloomington.....	.8195	94.10
3850	John W. O'Harrow.....	Bloomington.....	.8194	94.15
1870	Central Drug Store.....	Elkhart.....	.8184	94.41
1945	G. W. Rule.....	Goshen.....	.8191	94.23
1959	Public Drug Store.....	South Bend.....	.8190	94.35
2043	D. C. Peters.....	Laporte.....	.8200	94.00
2086	F. W. Meissner.....	Laporte.....	.8181	94.48
2042	J. M. Callender.....	Laporte.....	.8183	94.43
2077	City Drug Store.....	Michigan City.....	.8199	94.03
2189	W. C. Letherman.....	Valparaiso.....	.8198	94.18
2207	Heineman & Sievers.....	Valparaiso.....	.8198	94.05
2262	W. H. Porter.....	Logansport.....	.8195	94.13
2285	M. W. Edmonds.....	Delphi.....	.8191	94.23
3877	Wm. C. Pfau.....	Jeffersonville.....	.8194	94.15
2326	W. W. Johnson.....	Lafayette.....	.8197	94.08
3884	Schwaninger Bros.....	Jeffersonville.....	.8185	94.38
3889	Chas. D. Knoefel.....	New Albany.....	.8194	94.15
3900	B. Doolittle.....	Jeffersonville.....	.8192	94.21
3901	Crecelius.....	New Albany.....	.8183	94.43
3909	McDonald-Stockdell Co.....	New Albany.....	.8193	94.18
3917	Conner's Drug Store.....	New Albany.....	.8185	94.38
3922	Floyd Parks.....	Jeffersonville.....	.8195	94.10
3929	Doherty's Drug Store.....	Jeffersonville.....	.8190	94.51
2378	Wells-Yaeger-Best Co.....	Lafayette.....	.8183	94.43
2400	Anderson Drug Co.....	Anderson.....	.8192	94.21
2431	City Drug Store.....	Anderson.....	.8186	94.36
2459	Buck & Brickley.....	Anderson.....	.8183	94.43
2480	H. H. Ice.....	Muncie.....	.8189	94.28
2490	People's Drug Store.....	Muncie.....	.8188	94.31
2503	E. P. Whinrey.....	Muncie.....	.8183	94.43
2533	Shaw & Jackson.....	Muncie.....	.8198	94.05
2538	Physicians' Drug Store.....	Muncie.....	.8188	94.31
2575	City Drug Store.....	Alexandria.....	.8194	91.15
2617	F. W. Green.....	Elwood.....	.8132	85.24
2635	J. H. Kute.....	Elwood.....	.8178	94.58
2647	F. L. Saylor.....	Elwood.....	.8182	94.46
2668	Jay Bros.....	Kokomo.....	.8194	91.31
2712	Hollowell & Ryan.....	Kokomo.....	.8176	94.61
2795	S. Rosenthal.....	Tipton.....	.8185	94.38
2826	Francis Pharmacy.....	Indianapolis.....	.8178	94.56
2847	W. M. Burk.....	Indianapolis.....	.8193	94.43
2897	F. H. Carter.....	Indianapolis.....	.8197	94.06
2914	E. W. Stucky.....	Indianapolis.....	.8191	91.23
2924	L. N. Heims.....	Indianapolis.....	.8177	94.59
2979	Navin's Pharmacy.....	Indianapolis.....	.8187	94.33

## ALCOHOLS BELOW STANDARD.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity at 15.5°C.	Alcohol by Volume.	Remarks.
553	Buntin Drug Co .....	Terre Haute .....	.8203	93.93	Slightly below standard.
573	J. S. Modison .....	Terre Haute .....	.8225	93.36	Slightly below standard.
598	Geo. J. Hoffman .....	Terre Haute .....	.8228	93.29	Slightly below standard.
659	W. C. Watjen .....	Vincennes .....	.8349	89.72	Much below standard.
677	R. G. Moore .....	Vincennes .....	.8263	92.12	Below standard.
845	John Laval & Son .....	Evansville .....	.8222	93.44	Below standard.
1024	R. E. Clark .....	Wabash .....	.8205	93.87	Slightly below standard.
1060	Butterbaugh & Co .....	Wabash .....	.8308	90.93	Below standard.
1078	M. Kaylor .....	Huntington .....	.8475	85.77	Much below standard.
1086	Schaefer & Schaefer .....	Huntington .....	.8262	92.30	Below standard.
712b			.8235	93.09	Below standard.
1217	Pellen & Lewis .....	Ft. Wayne .....	.8223	93.41	Below standard.
1850	Housworth Bros .....	Elkhart .....	.8219	93.53	Below standard.
821c			.8227	93.31	Below standard.
1919	H. N. Jenner .....	Goshen .....	.8236	93.06	Below standard.
2007	O. C. Boston .....	South Bend .....	.8227	93.31	Below standard.
2021	R. P. Milton .....	South Bend .....	.8209	93.77	Slightly below standard.
2118	Bicknell & Co .....	Hammond .....	.8279	91.78	Below standard.
2145	M. Kolb .....	Hammond .....	.8201	93.98	Slightly below standard.
2181	Corner Drug Store .....	Valparaiso .....	.8202	93.95	Slightly below standard.
2253	Ben Fisher .....	Logansport .....	.8236	93.06	Below standard.
2302	M. M. Murphy .....	Delphi .....	.8229	93.26	Below standard.
2342	Ragan Bros .....	Lafayette .....	.8266	92.21	Below standard.
2394	Schultz & Boswell .....	Lafayette .....	.8237	93.03	Below standard.
2447	Cassell Bros .....	Anderson .....	.8282	88.70	Much below standard.
2584	E. C. Robinson .....	Alexandria .....	.8264	92.24	Below standard.
2609	Stringfellow & Co .....	Elwood .....	.8233	93.14	Below standard.
2694	W. T. Scott .....	Kokomo .....	.8238	93.00	Below standard.
2753	F. H. Hubbard .....	Kokomo .....	.8246	92.77	Below standard.
7811	H. Mehlig .....	Tipton .....	.8749	75.87	Heavily watered.
3504	C. L. Mitchell .....	Noblesville .....	.8223	93.41	Below standard.
3536	A. G. Baldwin .....	Noblesville .....	.8275	91.90	Below standard.

## AQUA AMMONIA.

U. S. P. Aqua Ammonia contains 10 per cent. by weight of gaseous ammonia. Of the 75 samples examined, which were collected from both drug and grocery stores, but seven were up to strength; 90.8 per cent. were weak, dilute solutions, ranging from 20 to 96 per cent. U. S. P. strength. The so-called ammonia water dispensed by grocers for laundry purposes is rarely or never as strong as it should be. There is always some loss of strength as the stock grows old, but it is evident that the chief cause of weakness is not due to deterioration but to wilful dilution with water in the endeavor to produce a cheap article, to satisfy the demand of an ignorant public for a quart bottle for ten cents.



## AQUA AMMONIA—LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Percentage Purity.
786	H. J. Lindeman.....	Washington.....	132.3
796	J. N. Jones.....	Washington.....	130.0
1106	Bradley Bros.....	Huntington.....	118.7
1831	H. M. Philips.....	Auburn.....	107.8
2103	Kaplansky & Morgan.....	Michigan City.....	120.7
2192	W. C. Letherman.....	Valparaiso.....	132.8
3521	Will E. Axline & Co.....	Noblesville.....	143.3

## AQUA AMMONIA—ILLEGAL.

497	S. Herr.....	Brasil.....	50.4
506	Fred Keller.....	Brasil.....	41.9
536	O. K. Horner.....	Brasil.....	96.1
575	J. S. Modison.....	Terre Haute.....	45.0
587	Geo. J. Hoffman.....	Terre Haute.....	82.7
611	Baur.....	Terre Haute.....	96.9
624	G. Reiss.....	Terre Haute.....	63.4
835	E. H. Robinson.....	Terre Haute.....	81.4
841	H. J. Werker.....	Vincennes.....	76.6
860	W. C. Watjen.....	Vincennes.....	82.9
680	R. G. Moore.....	Vincennes.....	81.9
689	C. S. Miller.....	Vincennes.....	51.3
713	I. J. Biggs.....	Princeton.....	71.8
727	E. Shoptaugh.....	Princeton.....	46.9
735	H. G. May.....	Princeton.....	31.7
764	F. S. Clapp.....	Washington.....	36.3
775	A. F. Schmidt.....	Washington.....	55.2
809	C. Kightly.....	Oakland City.....	46.9
818	A. Young.....	Oakland City.....	40.0
831	A. G. Troutman.....	Oakland City.....	73.9
858	J. F. Bomm.....	Evanville.....	68.8
874	Meek & Albers.....	Evanville.....	82.8
894	H. J. Schlaepfer.....	Mt. Vernon.....	96.1
914	H. H. Fogus.....	Mt. Vernon.....	40.9
923	Dawson & Boyce.....	Mt. Vernon.....	85.9
939	D. & H. Rosebaum.....	Peru.....	94.5
954	Joe Haney.....	Peru.....	37.9
973	Porter the Druggist.....	Peru.....	86.4
984	Blue Drug Store.....	Peru.....	57.5
1141	C. B. Woodworth & Co.....	Peru.....	25.7
1846	Houseworth Bros.....	Ft. Wayne.....	73.3
1184	H. G. Sommers.....	Elkhart.....	63.9
1897	Leonard & Bents.....	Ft. Wayne.....	62.2
1931	O. J. Beeson.....	Elkhart.....	90.4
1948	C. W. Rule.....	Elkhart.....	58.5
1983	C. Coonley & Co.....	Laporte.....	65.0
1998	O. C. Bostin.....	Laporte.....	51.2
2017	R. P. Milton.....	Hammond.....	57.1
2033	D. C. Peters.....	Logansport.....	67.1
2044	J. M. Collender.....	Logansport.....	53.5
2150	N. Kolb.....	Logansport.....	77.4
2250	Busjohn & Schneider.....	Delphi.....	73.4
2225	Ben Fisher.....	Lafayette.....	65.6
2247	G. W. Hoffman.....	Lafayette.....	57.8
2258	W. H. Porter.....	Kokomo.....	45.6
2298	M. M. Murphy.....	Kokomo.....	77.0
2358	J. D. Bartlett.....	Kokomo.....	79.6
2388	Schultz & Boswell.....	Kokomo.....	78.6
2780	L. Mehlig.....	Indianapolis.....	97.8
2711	Hollowell & Ryan.....	Noblesville.....	68.7
2732	Hutchings & Murphy.....	Noblesville.....	70.8
2738	F. H. Gerhart.....		
2938	Weber Drug Co.....		
3488	Frank E. Ross.....		
3518	Truitt & Son.....		

## HOUSEHOLD AMMONIA—ILLEGAL.

Laboratory Number.	Brand.	Retailer.	Where Collected.	Per Cent. Purity.
4863	Red Cross .....	Carter & Schober .....	Indianapolis.	48.0
5873	Golden Key .....	E. Miller .....	Ft. Wayne .....	45.0
5886	Victor .....	Joe Loos .....	Ft. Wayne .....	88.0
5894	White Star .....	G. E. Bursley .....	Ft. Wayne .....	88.0
5917	Oxfords .....	Amos R. Walter .....	Ft. Wayne .....	39.0
5928	Standard .....	Ft. Wayne Grocery Co. ....	Ft. Wayne .....	25.0
5941	Triumph .....	F. T. Mensch .....	Ft. Wayne .....	78.0
6004	Triumph .....	T. B. Hoffman .....	Goshen .....	69.0
6030	Triumph .....	A. J. Bicknell .....	Goshen .....	46.0
6055	Eagle .....	Robins Swinehart .....	Elkhart .....	29.0
6253	Maple City .....	Kramer & Sons .....	Laporte .....	32.0
6573	Inlanders .....	Braidich Bros. ....	Whiting .....	20.0

## BAY RUM.

Seventy-eight samples of bay rum were analyzed, of which 10, or 12.9 per cent., were adulterated. In every case the adulteration consisted in the use of methyl or wood alcohol. Most of the samples so adulterated contained but small quantities of ethyl alcohol. The use of methyl alcohol in such preparations is in violation of good business ethics and the pure drug law.

## BAY RUM—ILLEGAL.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. Methyl. Al.	Per Cent. Ethyl. Al.
876	Meek & Albers .....	Evansville .....	31.0	3.6
1223	Pelling & Lewis .....	Ft. Wayne .....	26.8	11.83
1918	H. N. Jenner .....	Goshen .....	52.3	3.9
1988	C. Coonley & Co. ....	South Bend .....	16.9	25.0
2191	W. C. Leatherman .....	Valparaiso .....	21.6	7.83
2245	G. W. Hoffman .....	Logansport .....	35.8	1.7
2257	W. H. Porter .....	Logansport .....	35.8	4.3
2672	J. Bros .....	Kokomo .....	38.5	8.0
2703	U. Scott .....	Kokomo .....	42.9	2.0
2904	L. T. Harker .....	Tipton .....	4.8	36.16

## BLACK ANTIMONY.

Of 45 samples of black antimony but two were pure antimony sulfid. All the others were almost entirely fraudulent. But seven of the entire number contained any antimony sulfid whatever, powdered coal, graphite or charcoal, mixed with small quantities of oxid of iron and marble dust being the usual article dispensed as black antimony.

The excuse of the wholesaler of such fraudulent mixtures is that black antimony is used only as horse medicine. Such an argument is a severe reflection on the intelligence of the veterinarian, for anyone who would knowingly prescribe a compound of coal and marble dust as a cure for disease knows no medicine.

## BLACK ANTIMONY—LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Remarks.
5369	Beam & Lynn .....	New Castle .....	Pure.
5581	Freehafer & Co .....	South Bend .....	Pure.

## BLACK ANTIMONY—ILLEGAL.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. Residue Insol. in HCl.	Remarks.
5082	C. G. Mueller .....	Indianapolis .....	43.88	Coal and marble dust.
5092	W. H. Kern .....	Indianapolis .....	37.48	Coal and marble dust.
5096	Maas Pharmacy .....	Indianapolis .....	50.90	Coal and marble dust.
5112	Chas. W. Lambert .....	Indianapolis .....	41.96	Coal and marble dust.
5142	A. W. Owen .....	Franklin .....	96.82	Coal dust.
5155	W. B. McCullough .....	Franklin .....	95.50	Coal dust.
5187	Ernst Stahlhut .....	Columbus .....	23.62	17% Antimony Sulfid.
5194	H. M. Holmes .....	Columbus .....	42.70	Coal and marble dust.
5245	E. P. Whinery .....	Muncie .....	51.62	Coal and marble dust.
5252	H. H. Ice .....	Muncie .....	96.12	Coal dust present.
5315	Geo. D. Cook .....	Covington .....	88.30	Coal dust present.
5320	J. P. Buckner .....	Covington .....	97.46	Coal dust present.
5330	Dan Holler .....	Attica .....	96.96	Coal dust present.
5331	H. W. Harbaugh .....	Attica .....	94.82	Coal dust present.
5334	J. O. Reid .....	Attica .....	36.36	Largely iron.
5338	C. F. Robinson .....	Attica .....	97.12	Coal dust present.
5343	B. J. Winger .....	Williamsport .....	96.58	Coal dust present.
5365	Corner Drug Store .....	New Castle .....	97.50	Charcoal present.
5366	L. E. Kinsey & Co .....	New Castle .....	96.82	Charcoal present.
5367	G. F. Mowrer .....	New Castle .....	96.40	Charcoal present.
5368	W. M. Pence .....	New Castle .....	42.50	Charcoal and marble.
5370	White's Pharmacy .....	South Bend .....	48.40	Marble dust present.
5371	Otto C. Bastian .....	South Bend .....	96.20	Coal dust present.
5375	Cooney's Drug Store .....	South Bend .....	97.40	Coal dust present.
5372	E. A. Schiffer .....	South Bend .....	85.48	Coal dust present.
5373	J. W. Papozinski .....	South Bend .....	43.94	Marble dust present.
5376	W. M. Patterson .....	South Bend .....	98.00	Coal dust present.
5377	Etiol Pharmacy .....	South Bend .....	67.08	Iron oxid. 2%; Anti. Sulf., 38%.
5378	Louis C. Kreider .....	South Bend .....	45.24	Marble dust present.
5379	Public Drug Store .....	South Bend .....	46.84	Marble dust present.
5342	Economical Drug Store .....	South Bend .....	98.08	Coal dust present.
5383	R. Fink .....	South Bend .....	23.60	Anti. Sulf., 1.4%.
5380	Fred A. Kusel .....	South Bend .....	49.10	Marble dust.
5385	V. Neidbalski .....	South Bend .....	91.00	Graphite present.
5386	Henry L. Spohn .....	South Bend .....	43.58	Anti. Sulf., 51%.
5387	R. H. Kuss .....	South Bend .....	64.90	Anti. Sulf., 30%.
5388	E. A. Fink .....	South Bend .....	48.60	Coal and marble dust.
5389	G. A. Sentrich & Co .....	South Bend .....	92.10	Coal dust.
5727	F. A. Mason .....	Marion .....	97.34	Coal dust.

## GLYCERINE.

Of the 61 samples of glycerine analyzed 47, or 77 per cent., did not conform to the standard of the U. S. Pharmacopoeia. In no case was there evidence of fraud, but the larger number of samples of inferior quality indicate that the trade uses little care in purchasing this article. Many of the samples contained free sulphuric acid, butyric acid, acrolein, etc., due to improper purification in the process of manufacture, and several contained a large amount of sugar.

## GLYCERINE—LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity.	H <sub>2</sub> SO <sub>4</sub> .	Butyric Acid.	Acrolein.	Remarks.
884	H. J. Schlaepfer ..	Evansville ..	1.250	.....	.....	.....	Pure.
1105	Bradley Bros. ....	Huntington ..	.....	.....	.....	.....	Pure.
1204	Meyer Bros. & Co. ..	Ft. Wayne ..	1.254	.....	.....	.....	Pure.
1823	H. B. McCord .....	Auburn .....	1.257	.....	.....	.....	Pure.
1885	F. J. Goldman .....	Elkhart .....	1.246	.....	.....	.....	Pure.
2040	J. M. Callender .....	Laporte .....	1.260	.....	.....	.....	Pure.
1969	Meyer's Drug Store.	South Bend ..	1.240	.....	.....	.....	Pure.
2130	J. W. Weiss .....	Hammond .....	1.257	.....	.....	.....	Pure.
2289	M. W. Edmonds .....	Delphi .....	1.250	.....	.....	.....	Pure.
2436	City Drug Store .....	Anderson .....	1.248	.....	.....	.....	Pure.
2529	Shaw & Jackson .....	Muncie .....	1.256	.....	.....	.....	Pure.
2630	J. H. Kute .....	Elwood .....	1.256	.....	.....	.....	Pure.
2723	Hutchings & Murphy	Kokomo .....	1.250	.....	.....	.....	Pure.
2899	H. J. Huder .....	Indianapolis ..	1.247	.....	.....	.....	Pure.

## GLYCERINE—ILLEGAL.

499	S. Herr .....	Brazil .....	1.233	Present	Present	Present	Below Phar. stand.
507	O. K. Horner .....	Brazil .....	1.248	Present	Present	.....	Below Phar. stand.
552	Bunton Drug Co. ....	Terre Haute ..	1.244	.....	Present	.....	Below Phar. stand.
605	A. Baur .....	Terre Haute ..	1.246	Present	.....	.....	Below Phar. stand.
619	G. Reiss .....	Terre Haute ..	1.247	.....	Present	Large amount	Below Phar. stand.
633	E. H. Robinson .....	Terre Haute ..	1.254	Present	Present	.....	Below Phar. stand.
643	H. J. Werker .....	Vincennes .....	1.247	Present	Present	Present	Below Phar. stand.
711	J. J. Biggs .....	Princeton .....	1.256	.....	Present	.....	Below Phar. stand.
726	E. Shoptaugh .....	Princeton .....	1.259	.....	.....	.....	Below Phar. stand.
738	H. G. May .....	Princeton .....	1.256	Present	Present	.....	Ca. salts present.
799	J. N. Jones .....	Washington ..	1.246	.....	Present	.....	Below Phar. stand.
808	Chas. Kightly .....	Oakland City ..	1.250	.....	Present	Present	Below Phar. stand.
822	A. Young .....	Oakland City ..	1.241	Present	Present	Present	Below Phar. stand.
833	A. G. Troutman .....	Oakland City ..	1.242	Present	.....	Present	Below Phar. stand.
842	John Laval & Son .....	Evansville .....	1.256	.....	.....	Present	Below Phar. stand.
864	J. F. Bomm .....	Evansville .....	1.259	.....	Present	Present	Below Phar. stand.
873	Meek & Albers .....	Evansville .....	1.249	.....	.....	Present	Below Phar. stand.
938	D. & H. Rosenbaum ..	Mt. Vernon .....	1.254	Present	Present	.....	Below Phar. stand.
959	Joe Haney .....	Peru .....	1.253	.....	Present	.....	Below Phar. stand.
986	Blue Drug Store .....	Peru .....	1.242	.....	Present	.....	Below Phar. stand.
1028	R. E. Clark .....	Wabash .....	1.242	.....	Present	.....	Below Phar. stand.
1042	Fowler & Kerlin .....	Wabash .....	1.230	Present	Present	.....	Below Phar. stand.
1059	Butterbaugh & Co. ....	Wabash .....	1.250	Present	.....	.....	Ca. salts present.
1136	C.B. Woodworth & Co.	Ft. Wayne .....	1.260	.....	.....	.....	Below Phar. stand.
1155	Ranke & Nussbaum ..	Ft. Wayne .....	1.256	.....	Present	.....	Sugar.
1187	H. G. Sommers .....	Ft. Wayne .....	1.253	Present	Present	Present	Below Phar. stand.

## GLYCERINE-ILLEGAL-Continued.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity.	H <sub>2</sub> SO <sub>4</sub> .	Butyric Acid.	Acrolein.	Remarks.
1215	Pellens & Lewis ....	Ft. Wayne ....	1.255	.....	.....	Present	Below Phar. stand.
1808	Ashton Staman .....	Auburn .....	1.250	.....	Present	.....	Below Phar. stand.
1852	Houseworth Bros ....	Elkhart .....	1.237	.....	.....	Present	Below Phar. stand.
1868	Central Drug Store ..	Elkhart .....	1.250	.....	.....	Present	Acrolein present.
1935	O. J. Beeson .....	Goshen .....	1.258	.....	Present	.....	Below Phar. stand.
1949	G. W. Rule .....	Goshen .....	1.240	.....	Present	.....	Below Phar. stand.
1984	C. Coonley & Co. ....	South Bend ..	1.247	.....	.....	Present	Below Phar. stand.
2022	R. P. Milton .....	South Bend ..	1.251	.....	.....	Present	Below Phar. stand.
2035	F. W. Meissner .....	Laporte .....	1.240	.....	Present	.....	Below Phar. stand.
2151	M. Kolb .....	Hammond .....	1.216	.....	.....	Present	Below Phar. stand.
2179	Corner Drug Store ..	Valparaiso ..	1.247	.....	Present	.....	Below Phar. stand.
2313	Lytle & Orr .....	Delphi .....	1.236	.....	Present	.....	Below Phar. stand.
2329	W. W. Johnson .....	Lafayette .....	1.247	.....	.....	.....	Below Phar. stand.
2390	Schults & Boswell ..	Lafayette ....	1.250	.....	.....	.....	Ca. salts present.
2402	Anderson Drug Co. ...	Anderson .....	1.260	.....	.....	Present	Below Phar. stand.
2416	Caswell Bros .....	Anderson .....	1.230	Present	.....	.....	Ca. salts present.
2462	Buck & Brickley .....	Anderson .....	1.250	.....	.....	.....	Below Phar. stand.
2560	W. H. Birely .....	Alexandria ..	1.242	.....	.....	Present	Ca. salts present.
2568	City Drug Store .....	Alexandria ..	1.254	.....	.....	.....	Below Phar. stand.
2754	F. H. Hubbard .....	Kokomo .....	1.233	.....	.....	.....	Below Phar. stand.
2830	Francis Pharmacy ..	Indianapolis ..	1.249	.....	Present	Present	Chlorid. present.
							Below Phar. stand.

## LIMEWATER (LIQUOR CALCIS).

One hundred and sixty-six samples of limewater were analyzed, and of that number 75, or 45.1 per cent., were below the U. S. P. standard. Limewater is simply a saturated aqueous solution of pure unslaked lime, the most easily prepared article to be found in a drug store. And yet the large number of adulterated samples would indicate that in nearly fifty per cent. of the drug stores of the State this article is not properly prepared. The explanation is doubtless that water is added to the jug containing the lime long after all of the lime has been dissolved. A number of the samples were entirely neutral, having no more alkalinity than tap water. The ignorance or greed of anyone who will dispense tap water when asked for something to correct acidity in milk fed an infant can only be suitably corrected by a severe application of official punishment.

## LIME WATER—LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Percentage Purity.
722	E. Shoplaugh	Princeton	115.2
751	Clara & Sons	Princeton	111.7
846	John Laval & Son	Evansville	114.3
927	Dawson & Boyce	Mt Vernon	113.0
1014	Fowler & Kerlin	Wabash	117.7
1168	Dreier & Bro	Ft. Wayne	114.3
1229	Pellens & Lewis	Ft. Wayne	101.1
1208	Meyer Bros. & Co.	Ft. Wayne	121.2
1809	Ashton Staman	Auburn	120.0
1825	H. B. McCord	Auburn	108.2
1836	H. M. Phillips	Auburn	120.0
1963	Public Drug Store	South Bend	108.2
2035	D. C. Peters	Laporte	114.3
2030	F. W. Meissner	Laporte	123.5
2096	Kaplousky & Moran	Michigan City	134.1
2115	E. W. Lindemann	Michigan City	117.7
2117	Bicknell & Co	Hammond	110.6
2202	Heineman & Sievers	Valparaiso	100.0
2224	Busjohn & Schneider	Logansport	110.6
1220			117.7
2276	Red Cross Pharmacy	Logansport	110.6
2363	J. D. Bartlett	Lafayette	114.3
2428	City Drug Store	Anderson	108.2
2466	Buck & Brickley	Anderson	116.3
2528	Shaw & Jackson	Muncie	106.9
2641	F. L. Saylor	Elwood	124.6
2684	L. Mehlig	Kokomo	115.2
2696	W. Scott	Kokomo	128.2
2725	Hutchings & Murphy	Kokomo	114.3
2841	W. M. Birk	Indianapolis	105.9
2956	E. H. Wilson	Indianapolis	109.3
3515	A. W. Truitt	Noblesville	120.0
3526	Will E Axline & Co	Noblesville	117.7
3534	A. G. Baldwin	Noblesville	102.2
4904	G. A. Senrich & Co	South Bend	101.0
4906	Chas. Coonley	South Bend	108.4
4906	Robert P. Milton	South Bend	116.8
4907	Otto C. Bastian	South Bend	108.4
4908	Public Drug Store	South Bend	108.4
4910	Eliel's Pharmacy	South Bend	115.7
4911	E. A. Schiffer	South Bend	104.0
4912	White's Pharmacy	South Bend	104.0
4915	H. E. Freehafer & Co	South Bend	106.3
4917	Fink Bros	South Bend	115.7
4918	Louis C. Kreidler	South Bend	108.4
4919	Fred A. Kusel	South Bend	113.7
4920	Meyer's Drug Store	South Bend	111.4
4934	Samuel T. Applegate	South Bend	109.5
4926	Otto J. Klaer	South Bend	107.3
4927	Ralph H. Kuss	South Bend	110.5
4953	Smith & Brown	Knightstown	124.6
5031	Moffet & Morgan	Crawfordsville	117.6
5040	G. W. Steele	Crawfordsville	124.6
5101	Maas Pharmacy	Indianapolis	103.4
5109	Owl Pharmacy	Indianapolis	115.3
5123	Hoskins & Miller	Indianapolis	121.2
5165	Theo Otto	Columbus	131.6
5174	A. H. Fehring	Columbus	110.4
5182	Crescent Drug Store	Columbus	124.6
5204	Lytle's Corner Drug Store	Rushville	141.0
5250	Andrew's Drug Store	Muncie	105.8
5694	City Drug Store	Elwood	113.0
5705	King Drug Store	Elwood	127.0
5725	F. A. Mason	Marion	120.0
5746	L. Mehlig	Kokomo	106.0
5824	Meyer Bros. Drug Store	Ft. Wayne	100.0
5849	Christain Bros. Drug Store	Ft. Wayne	105.0
5858	Beverforden	Ft. Wayne	106.0
5863	L. J. Zollinger	Ft. Wayne	110.2
6006	O. J. Buson	Goshen	113.6
6063	C. D. Walls	Elkhart	107.3
6093	Coonley Drug Store	South Bend	115.7
6113	Louis O. Kreidler	South Bend	120.9

## LIME WATES—LEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.	Percentage Purity.
6141	Senrich & Co.	South Bend	109.4
6147	S. T. Applegate	South Bend	117.8
6160	J. E. C. F. Harper	Madison	113.6
6161	Gibson & Riedel	Madison	113.6
6162	McDonald, Stockdell & Co.	New Albany	106.0
6314	Otto C. Bastian	South Bend	108.3
6321	Houseworth Bros.	Elkhart	118.8
6322	Fred A. Kusel	South Bend	118.8
6347	T. H. Boyds	Laporte	123.1
6354	A. E. Keport	Hammond	103.1
6361	E. R. Star	Hammond	117.8
6390	W. H. Williams	Valparaiso	107.3
6396	Heineman-Sievers	Valparaiso	113.6
6422	Oak Drug Store	Plymouth	107.3
6467	G. D. Keith	Rochester	109.4
6484	Chicasaw Drug Store	Peru	108.3
6560	L. H. Mattern	Whiting	106.3
6589	Bickenel & Co.	Hammond	107.3
6599	Sommers Drug Store	Hammond	108.4

## LIME WATER—ILLEGAL.

911	W. H. Fogus	Mt. Vernon	7.0
1072	M. Kaylor	Huntington	11.7
1154	Ranke & Nussbaum	Ft. Wayne	67.0
1916	H. N. Jenner	Goshen	49.4
1951	G. W. Rule	Goshen	55.8
1991	C. Coonley & Co.	South Bend	71.7
2064	T. H. Boyd & Co.	Laporte	29.4
2087	Woodson & Willetts	Michigan City	90.6
2131	J. W. Weis	Hammond	45.9
2164	Summers Pharmacy	Hammond	97.6
2190	W. C. Letherman	Valparaiso	91.7
2344	Ragan Bros.	Lafayette	4.7
2482	People's Drug Store	Muncie	64.7
2514	V. E. Silverburg	Muncie	5.8
2586	E. C. Robinson	Alexandria	4.7
2598	F. C. Jones	Alexandria	11.7
2666	Jay Bros.	Kokomo	4.7
2715	Hollowell & Ryan	Kokomo	87.0
2777	Moore Bros.	Tipton	77.6
2803	L. T. Harker	Tipton	71.7
2827	Francis Pharmacy	Indianapolis	57.6
2862	A. B. Carr	Indianapolis	77.6
2912	E. W. Stuckey	Indianapolis	57.6
2929	I. N. Heims	Indianapolis	83.5
2940	Weber Drug Co.	Indianapolis	28.3
4909	G. E. Zimmerman	South Bend	96.9
4913	H. L. Spohn	South Bend	35.8
4914	W. M. Patterson	South Bend	.5
4916	Economical Drug Store	South Bend	75.8
4921	J. W. Papoczynski	South Bend	.9
4922	E. A. Fink	South Bend	33.7
4923	V. Neidbalski	South Bend	98.9
4927	Mowrer's Drug Store	South Bend	52.6
4928	Beam & Lynn	New Castle	.9
4929	Corner Drug Store	New Castle	8.4
4930	L. E. Kinsey & Co.	New Castle	7.5
5116	C. W. Lambert	Indianapolis	30.5
5129	B. T. Fisher	Indianapolis	20.2
5193	H. M. Holmes	Columbus	96.4
5005	Dunham & Jacobs	Indianapolis	.3
5021	Given-Campbell Co.	Frankfort	14.0
5038	W. D. Coleman	Crawfordsville	33.0
5072	John A. Hook	Indianapolis	59.0
5083	C. G. Mueller	Indianapolis	77.6
5200	Hargrove & Mullin	Rushville	0.0
5203	F. B. Johnston & Co.	Rushville	42.3
5253	H. H. Ice	Muncie	71.6
5678	F. E. Ross	Noblesville	11.7
5683	Moore Bros.	Tipton	11.7

## LIME WATER—ILLEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.	Percentage Purity.
5691	S. Rosenthal	Tipton	12.0
5756	H. H. Hubbard	Kokomo	71.6
5880	Ed. Mertz	Ft. Wayne	88.2
5910	F. D. Hoham	Ft. Wayne	3.0
5958	C. O. Haines	Danville	54.7
6013	J. A. Bickel	Goshen	87.3
6025	H. N. Jenner	Goshen	94.6
6049	F. H. Benz	Elkhart	29.4
6073	E. B. Felt	Elkhart	82.0
6087	E. J. Finehout	Elkhart	39.9
6109	W. M. Patterson	South Bend	93.6
6127	Chapin Park	South Bend	52.6
6153	Leo Eliel	South Bend	33.6
6336	J. M. Callender	Laporte	84.2
6369	M. Kolb	Hammond	8.4
6418	L. Tanner	Plymouth	42.1
6453	Edw. L. Fieser	Rochester	81.5
6473	R. E. Murphy	Peru	31.5
6494	Blue Drug Store	Peru	2.6
6522	City Drug Store	Michigan City	35.7
6530	E. W. Lindeman	Michigan City	97.3
6546	Kramer	Michigan City	82.6
6553	Otto Kloepper	Michigan City	79.0
6564	Whiting Drug Store	Whiting	75.7
6603	W. C. Leatherman	Valparaiso	91.5

## PRECIPITATED SULPHUR (SULPHUR PRAECIPITATUM).

Of the 141 samples of precipitated sulphur analyzed but 17 were pure. All the other samples, or 88.0 per cent., contained large quantities of calcium sulfate. But few samples contained more than 55 per cent. of sulphur, and in most of the samples the calcium sulfate content was about equal to that of sulphur. This condition is undoubtedly the result of careless preparation.

Precipitated sulphur is a preparation made by boiling a mixture of powdered sulphur and slaked lime, filtering the solution, and adding hydrochloric acid. The precipitate is then filtered and washed. Precipitated sulphur contains no calcium sulfate and leaves no sediment on ignition.



## PRECIPITATED SULPHUR—LEGAL.

Laboratory Number.	Retailer.	Where Collected.
5102	Maas Pharmacy.....	Indianapolis.
5105	Owl Pharmacy.....	Indianapolis.
5161	Theo Otto.....	Columbus.
5270	Owl Drug Store.....	Muncie.
5890	H. F. Beverforden.....	Ft. Wayne.
6318	Otto C. Bastian.....	South Bend.
6061	T. J. Goldman.....	Elkhart.
4884	Eliei Pharmacy.....	South Bend.
4886	H. E. Freehafer & Co.....	South Bend.
4888	Central Pharmacy.....	South Bend.
4889	R. H. Russ.....	South Bend.
4890	H. L. Spohn.....	South Bend.
4892	J. W. Papoczynski.....	South Bend.

## PRECIPITATED SULPHUR—ILLEGAL.

Laboratory Number.	Retailer.	Where Collected.	Per cent. of Sulphur.	Per cent. of Calcium Sulfate.	Remarks.
715	I. J. Biggs.....	Princeton.....	61.3	48.7	Adulterated.
780	A. F. Schmidt.....	Washington.....	54.1	45.9	Adulterated.
838	A. G. Troutman.....	Oakland City.....	51.9	48.1	Adulterated.
866	J. F. Bomm.....	Evansville.....	51.1	48.9	Adulterated.
880	Meek & Albers.....	Evansville.....	48.6	48.6	Adulterated.
978	Porter the Druggist.....	Peru.....	51.5	48.5	Adulterated.
1095	Schaefer & Schaefer.....	Huntington.....	50.9	49.1	Adulterated.
1161	Ranke & Nussbaum.....	Ft. Wayne.....	53.6	46.4	Adulterated.
1181	Dreier & Bro.....	Ft. Wayne.....	40.8	50.2	Adulterated.
1828	H. B. McCord.....	Auburn.....	94.3	5.7	Adulterated.
1842	H. M. Phillips.....	Auburn.....	54.0	46.0	Adulterated.
1878	Central Drug Store.....	Elkhart.....	51.0	49.0	Adulterated.
1894	F. J. Goldman.....	Elkhart.....	50.7	49.3	Adulterated.
1911	Leonard & Bentz.....	Elkhart.....	51.8	48.2	Adulterated.
1995	C. Coonley & Co.....	South Bend.....	50.8	49.2	Adulterated.
2049	J. M. Callender.....	Laporte.....	51.4	48.6	Adulterated.
2060	T. H. Boyd & Co.....	Laporte.....	54.1	45.9	Adulterated.
2183	Corner Drug Store.....	Valparaiso.....	51.8	48.2	Adulterated.
2706	W. Scott.....	Kokomo.....	53.7	46.3	Adulterated.
4143	Francis Pharmacy.....	Indianapolis.....	52.1	47.9	Adulterated.

## PRECIPITATED SULPHUR—ILLEGAL.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. of Calcium Sulfate.
4876	Coonley's Drug Store.....	South Bend.....	47.1
4877	Fred A. Kusel.....	South Bend.....	49.1
4878	E. A. Schiffer.....	South Bend.....	48.6
4879	White's Pharmacy.....	South Bend.....	47.9
4882	Meyer's Pharmacy.....	South Bend.....	46.7
4883	Wm. M. Patterson.....	South Bend.....	47.3
4885	E. A. Fink.....	South Bend.....	47.3
4887	Public Drug Store.....	South Bend.....	47.7
4893	Applegate's Pharmacy.....	South Bend.....	44.6
4894	Otto C. Bastian.....	South Bend.....	45.3
4895	V. Niedbalski.....	South Bend.....	48.3
4896	Louis Kreidler.....	South Bend.....	48.2
4897	Economical Drug Store.....	South Bend.....	47.1

## PRECIPITATED SULPHUR—ILLEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. of Calcium Sulfate.
4899	Morer's Drug Store	New Castle	46.3
4900	L. E. Kinsey & Co.	New Castle	48.5
4901	Beam & Lynn	New Castle	47.6
4902	W. M. Pence	New Castle	33.9
4918	A. C. Fouche	Knightstown	42.2
4955	Columbia Drug Co.	Knightstown	44.3
5001	Dunham & Jacobs	Indianapolis	29.0
5033	W. D. Coleman	Crawfordsville	48.7
5055	Morgan & Dick	Crawfordsville	48.5
5059	Pean Pharmacy	Cambridge City	44.0
5082	T. E. Mills	Cambridge City	52.9
5074	John A. Hook	Indianapolis	38.0
5078	C. G. Mueller	Indianapolis	45.7
5115	Chas. W. Lambert	Indianapolis	47.0
5118	Hoskins & Miller	Indianapolis	47.0
5126	B. T. Fisher	Indianapolis	48.5
5180	Crescent Drug Store	Columbus	44.5
5190	H. M. Holmes	Columbus	49.2
5197	Phenix Drug Store	Columbus	44.8
5238	M. Stewart	Muncie	47.3
5259	Nickey Drug Store	Muncie	47.8
5263	Physician's Drug Store	Muncie	49.5
5277	Stevens & Nicolls	Muncie	39.0
5287	Henderson Drug Store	Anderson	46.5
5293	City Drug Store	Anderson	47.3
5298	E. T. Brickley	Anderson	49.2
5302	Anderson Drug Co.	Anderson	49.2
5305	G. E. Cook	Anderson	49.0
5316	Geo. D. Cook	Covington	49.0
5325	Hedges' Drug Store	Covington	49.2
5340	A. B. Donovan	Williamsport	44.5
5676	A. W. Truitt	Noblesville	49.7
5684	Moore Bros.	Tipton	49.5
5693	City Drug Store	Elwood	47.2
5696	City Drug Store	Elwood	47.4
5698	Opera House Drug Store	Elwood	48.5
5712	Dr. T. L. Saylor	Elwood	47.3
5714	C. C. Robinson	Alexandria	46.5
5716	City Drug Store	Alexandria	48.5
5724	Bradley Bros.	Marion	48.5
5729	Evans	Marion	48.0
5733	Davis Drug Store	Marion	46.0
5738	A. W. Leedy	Marion	50.0
5741	Meek Drug Store	Kokomo	47.2
5745	J. Bros.	Kokomo	48.8
5747	L. Mehlig	Kokomo	45.8
5752	C. O. Scott	Kokomo	50.0
5823	Meyers Bros.	Ft. Wayne	44.9
5837	Geo. Loesche	Ft. Wayne	49.2
5847	Christian Bros.	Ft. Wayne	49.2
5868	L. J. Zollinger	Ft. Wayne	46.8
6066	C. D. Walls	Elkhart	47.6
6072	Housworth Bros.	Elkhart	49.1
6077	E. B. Felt	Elkhart	50.0
6090	E. J. Finehout	Elkhart	48.0
6103	Public Drug Store	South Bend	47.7
6111	W. M. Patterson	South Bend	48.6
6138	T. A. Kusel	South Bend	49.2
6144	Senrich & Co.	South Bend	47.6
6151	Samuel T. Applegate	South Bend	46.9
6365	E. R. Stanffer	Hammond	47.0
6370	M. Kolb	Hammond	48.9
6387	Ben S. Wallick	Valparaiso	49.1
6392	W. H. Williams	Valparaiso	48.5
6399	Heinemann-Sievers	Valparaiso	49.7
6412	People's Drug Store	Plymouth	45.9
6419	L. Tanner	Plymouth	49.2
6424	Oak Drug Store	Plymouth	50.2
6433	Shadel's Drug Store	Plymouth	48.3
6440	U. Rinard	Plymouth	49.8
6448	Shore & Wilson	Rochester	48.3
6455	Ed. L. Fieser	Rochester	48.7
6461	Geo. V. Dawson	Rochester	48.9

## PRECIPITATED SULPHUR—ILLEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. of Calcium Sulfate.
6469	Geo. D. Keith .....	Rochester.....	47.6
6479	R. E. Murphy.....	Peru.....	31.6
6488	Chickasaw Drug Co.....	Peru.....	49.8
6497	Blue Drug Store.....	Peru.....	47.9
6503	M. W. Hamaker.....	Peru.....	49.7
6509	Porter the Druggist.....	Peru.....	46.5
6520	Thieband & Co.....	Peru.....	47.6
6547	Kramer Drug Co.....	Michigan City.....	47.9
6556	Otto Kloepper.....	Michigan City.....	47.9
6569	Whiting Drug Store.....	Whiting.....	48.3
6579	Otto Negele.....	Hammond.....	49.6
6592	Bicknell & Co.....	Hammond.....	48.7
6596	Sommers.....	Hammond.....	48.6

## BEESWAX.

Beeswax is prepared by melting the honey free comb made by the bees, and skimming and filtering off the impurities. It is very liable to adulteration, as is shown by the results of our analyses. Of 87 samples of yellow or natural beeswax, 60 contained paraffin in quantities ranging from 10 per cent to 100 per cent., while but two out of 70 samples of bleached or white wax were free from paraffin.

Beeswax is worth 50 cents a pound, paraffin but 10 cents, a difference which readily explains the heavy adulteration of this article.

## BEESWAX, YELLOW—LEGAL.

Laboratory Number.	Retailer.	Where Collected.
5827	Meyer's.....	Ft. Wayne.
5840	Geo. Loesche.....	Ft. Wayne.
5884	Ed Mertz.....	Ft. Wayne.
6401	Heineman-Sievers.....	Valparaiso.
6136	Shadel's Drug Store.....	Plymouth.
6548	Kramer Drug Co.....	Michigan City.
630	G. Reiss.....	Terre Haute.
655	H. J. Werker.....	Vincennes.
685	R. G. Moore.....	Vincennes.
850	John Loyal & Son.....	Evansville.
921	W. H. Fogus.....	Mt. Vernon.
933	Dawson & Boyce.....	Mt. Vernon.
977	Porter, The Druggist.....	Peru.
1037	R. E. Clark.....	Wabash.
1080	M. Kaylor.....	Huntington.
1109	Bradley Bros.....	Huntington.
1815	Ashton Staman.....	Auburn.
1830	H. B. McCord.....	Auburn.
1843	H. M. Phillips.....	Auburn.
1861	Housworth Bros.....	Elkhart.
1968	Public Drug Store.....	South Bend.
2025	P. Milton.....	South Bend.

## BEESWAX, YELLOW—LEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.
2032	D. C. Peters .....	Laporte.
2091	Kaplansky & Moran .....	Michigan City.
2322	Ragan Bros. ....	Lafayette.
2384	Schultz & Boswell .....	Lafayette.
2969	E. H. Wilson .....	Indianapolis.

## BEESWAX, YELLOW—ILLEGAL.

Laboratory Number.	Retailer.	Where Collected.	Butyro Reading.	Per Cent. Paraffin.	Remarks.
5851	Christian Bros. ....	Ft. Wayne .....	28.6	20.0	
5861	H. F. Beverforden .....	Ft. Wayne .....	25.8	30.0	
5902	F. D. Hohman .....	Ft. Wayne .....	16.0	90.0	
6124	H. L. Spohn .....	South Bend .....	28.9	5.0	
6129	Chapin Park Store .....	South Bend .....	25.9	30.0	
6139	T. A. Kusel .....	South Bend .....	21.6	55.3	
6358	A. E. Keport .....	Hammond .....	27.8	20.0	
6380	J. W. Weise .....	Hammond .....	29.6	5.0	
6430	Chickasaw Drug Co. ....	Peru .....	14.3	100.0	
6532	E. W. Lindeman .....	Michigan City .....	30.0	5.0	
6570	Whiting Drug Co. ....	Whiting .....	23.9	40.0	
6598	Sommers Drug Co. ....	Hammond .....	29.4	10.0	
505	S. Herr .....	Brazil .....	70.0	70.0	
518	Fred Keller .....	Brazil .....	70.0	70.0	
564	Bunton Drug Co. ....	Terre Haute .....	70.0	70.0	
576	J. S. Madison .....	Terre Haute .....	70.0	70.0	
602	C. W. J. Hoffman .....	Terre Haute .....	50.0	50.0	
614	Baur & Co. ....	Terre Haute .....	70.0	70.0	
672	W. C. Watjen .....	Vincennes .....	Not pure wax	75.0	
705	C. S. Miller .....	Vincennes .....	Not pure wax	75.0	
732	E. Shoptaugh .....	Princeton .....	70.0	70.0	
745	H. G. May .....	Princeton .....	75.0	75.0	
767	F. S. Clapp .....	Washington .....	80.0	80.0	
814	C. Kightly .....	Oakland City .....	90.0	90.0	
873	Meek & Albers .....	Kravisville .....	5.0	5.0	
948	Bradley Bros. ....	Wabash .....	Not pure wax	5.0	
1021	Butterbough & Co. ....	Wabash .....	70.0	70.0	
1052	Schaefer & Schaefer .....	Huntington .....	10.0	10.0	
1069	J. C. Hutzell .....	Ft. Wayne .....	80.0	80.0	
1100	H. N. Jenner .....	Goshen .....	Not pure wax	15.0	
1129	G. W. Rule .....	Goshen .....	15.0	15.0	
1194	F. W. Meissner .....	Laporte .....	5.0	5.0	
1927	M. Kolb .....	Hammond .....	30.0	30.0	
1954	Heineman & Sievers .....	Valparaiso .....	Not pure wax	Dirty	
2044	Red Cross Pharmacy .....	Logansport .....	85.0	85.0	
2139	.....	Delphi .....	10.0	10.0	
2153	.....	Lafayette .....	10.0	10.0	
2215	.....	Anderson .....	80.0	80.0	
2267	.....	Anderson .....	Not pure wax	75.0	
2280	.....	Muncie .....	10.0	10.0	
2291	.....	Muncie .....	70.0	70.0	
2341	.....	Elwood .....	70.0	70.0	
2453	.....	Elwood .....	Pure paraffin	75.0	
2463	.....	Alexandria .....	70.0	70.0	
2511	.....	Kokomo .....	80.0	80.0	
2524	.....	Kokomo .....	80.0	80.0	
2614	.....	Tipton .....	80.0	80.0	
2655	.....	Tipton .....	30.0	30.0	
2665	.....	Indianapolis .....	10.0	10.0	
2683	.....	Indianapolis .....	80.0	80.0	
2734	.....	Indianapolis .....	95.0	95.0	
2772	.....	Noblesville .....			
2787	.....	Noblesville .....			
2936	.....	Noblesville .....			
2953	.....	Noblesville .....			
3506	.....	Noblesville .....			
3545	.....	Noblesville .....			

## BEESWAX, WHITE—LEGAL.

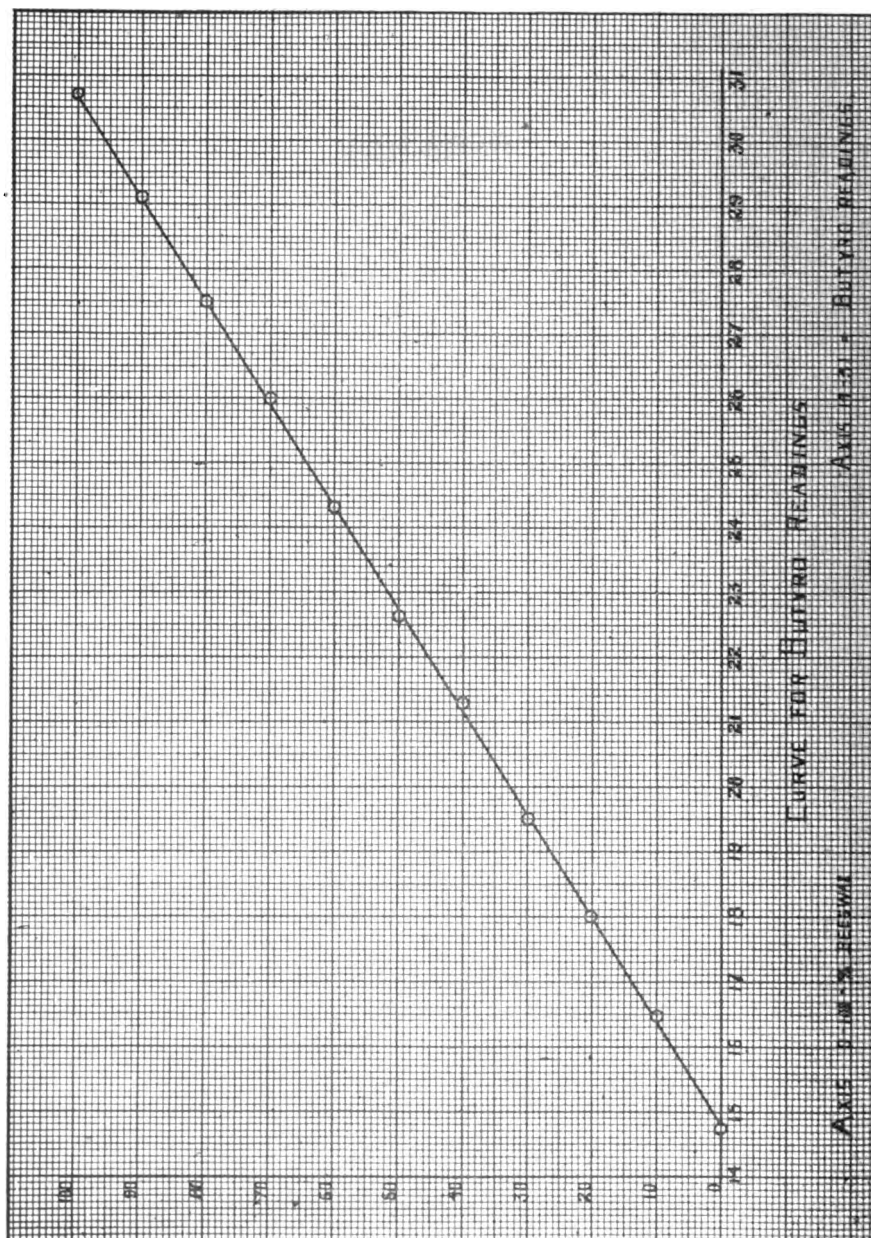
Laboratory Number.	Retailer.	Where Collected.	Per Cent. Paraffin.
582	Buntin Drug Co .....	Terre Haute .....	None.
2214	Heinemann & Sievers .....	Valparaiso .....	None.

## BEESWAX, WHITE—ILLEGAL.

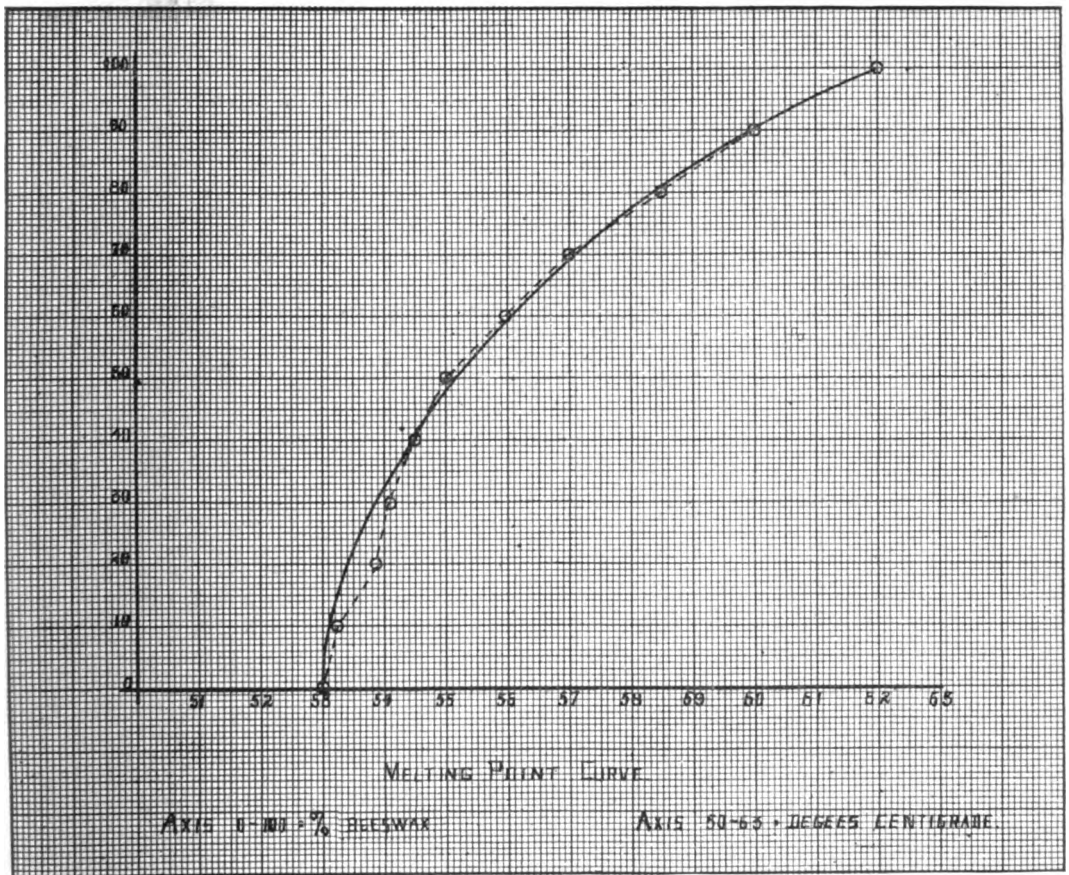
515	Fred Keller .....	Brasil .....	75
582	J. S. Madison .....	Terre Haute .....	Pure paraffin.
599	Geo. J. Hoffman .....	Terre Haute .....	30
613	Baur .....	Terre Haute .....	20
631	G. Reiss .....	Terre Haute .....	85
654	H. J. Werkes .....	Terre Haute .....	20
673	W. E. Watjen .....	Vincennes .....	85
687	R. G. Moore .....	Vincennes .....	20
701	C. S. Miller .....	Vincennes .....	85
742	H. G. May .....	Princeton .....	25
769	F. S. Clapp .....	Washington .....	15
795	H. J. Lindenmann .....	Washington .....	80
804	J. N. Jones .....	Washington .....	20
817	C. Knightly .....	Oakland City .....	15
882	Meek & Albers .....	Evansville .....	20
920	W. H. Fognus .....	Mt. Vernon .....	20
934	Dawson & Boyce .....	Mt. Vernon .....	30
949	D. H. Rosenbaum .....	Mt. Vernon .....	95
981	Porter, the Druggist .....	Peru .....	90
993	Blue Drug Store .....	Peru .....	90
1017	Bradley Bros. ....	Wabash .....	20
1034	R. E. Clark .....	Wabash .....	15
1053	Fowler & Kerlin .....	Wabash .....	Pure paraffin.
1064	Butterbaugh & Co. ....	Wabash .....	95
1079	M. Kaylor .....	Huntington .....	20
1097	Schaefer & Schaefer .....	Huntington .....	15
1110	Bradley Bros. ....	Huntington .....	Not pure wax.
1130	J. C. Hutzell .....	Ft. Wayne .....	20
1193	H. G. Sommers .....	Ft. Wayne .....	75
1816	Ashton Stamon .....	Auburn .....	20
1829	H. B. McCord .....	Auburn .....	15
1859	Housworth Bros. ....	Elkhart .....	20
1924	H. N. Jenner .....	Goshen .....	20
1955	G. W. Rule .....	Goshen .....	15
1967	Public Drug Store .....	South Bend .....	70
1980	Myers' Drug Store .....	South Bend .....	25
2026	R. P. Milton .....	South Bend .....	30
2030	D. C. Peters .....	Laporte .....	15
2043	F. W. Meissner .....	Laporte .....	20
2052	J. M. Callender .....	Laporte .....	15
2055	T. H. Boyd & Co. ....	Laporte .....	15
2092	Koplansky & Moran .....	Michigan City .....	20
2140	J. W. Weis .....	Hammond .....	80
2153	M. Kolb .....	Hammond .....	10
2199	W. C. Letherman .....	Valparaiso .....	15
2239	Ben Fisher .....	Logansport .....	90
2271	W. H. Porter .....	Logansport .....	10
2282	Red Cross Pharmacy .....	Logansport .....	10
2310	M. M. Murphy .....	Delphi .....	85
2319	Lytle & Orr .....	Delphi .....	35
2338	Ragan Bros. ....	Lafayette .....	70
2383	Schultz & Boswell .....	Lafayette .....	20
2410	Anderson Drug Store .....	Anderson .....	Pure paraffin.
2427	City Drug Store .....	Anderson .....	90
2451	Cassill Bros. ....	Anderson .....	Pure paraffin.
2471	Buck & Brickley .....	Anderson .....	90
2510	E. P. Whinrey .....	Muncie .....	90
2552	Physicians' Drug Store .....	Muncie .....	Pure paraffin.
2564	W. H. Bireley .....	Alexandria .....	30
2650	F. L. Saylor .....	Elwood .....	Pure paraffin.
2675	Joy Bros. ....	Kokomo .....	Pure paraffin.
2693	L. Mehlig .....	Kokomo .....	Pure paraffin.
2718	Hollowell & Ryan .....	Kokomo .....	90
2773	J. O. Lindsay .....	Tipton .....	10
2947	Weber Drug Co. ....	Indianapolis .....	80
3530	Will E. Axline & Co. ....	Noblesville .....	80
3544	A. G. Baldwin .....	Noblesville .....	95

**BEESWAX.**

The butyro-refractometer of Zeiss can be used advantageously in determining the purity of a beeswax, the refractive index being very different from that of paraffin, its chief adulterant. If care is taken to control the temperature at which the reading is made it is possible to determine accurately the percentage of adulteration. The addition of each ten per cent. of paraffin decreases the butyro reading 1.6 degree. Based on this constant difference one of the assistant chemists, N. Thompson, has plotted the following curve, taking for a basis for work definite mixtures of beeswax and paraffin.



He has also determined the change in melting point for different mixtures of beeswax and paraffin and the results are plotted in the following curve.



#### SPIRITS OF CAMPHOR (SPIRITUS CAMPHORAE).

U. S. P. spirits of camphor is prepared by dissolving 100 grams of camphor gum in 800 centimeters of alcohol and making up to one liter. But 30 to 70 samples analyzed contained a sufficient quantity to satisfy this formula. One sample contained but 16 per cent. of the required amount.



## SPIRITS OF CAMPHOR—LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. U. S. P. Strength.	Per Cent. Alcohol.
708	I. J. Biggs.....	Princeton.....	149.0	55.5
774	A. F. Schmidt.....	Washington.....	324.0	51.0
789	H. J. Lindeman.....	Washington.....	95.0	75.6
802	J. N. Jones.....	Washington.....	95.0	75.6
912	W. H. Fogus.....	Mt. Vernon.....	108.0	72.9
1091	Schaefer & Schaefer.....	Huntington.....	100.0	67.5
1104	Bradley Bros.....	Huntington.....	117.0	59.4
1140	C. B. Woodworth.....	Ft. Wayne.....	102.0	67.8
1888	F. J. Goldman.....	Elkhart.....	106.0	55.5
1930	O. J. Beeson.....	Goshen.....	132.0	48.9
1942	O. J. Beeson.....	Goshen.....	118.0	58.8
1973	Meyers Drug Store.....	South Bend.....	95.0	65.7
2016	R. P. Milton.....	South Bend.....	118.0	59.1
2076	City Drug Store.....	Michigan City.....	116.0	66.6
2088	Woodson & Willetts.....	Michigan City.....	115.0	72.1
2101	Kaplauskis & Moran.....	Michigan City.....	147.0	74.0
2138	J. W. Weis.....	Hammond.....	104.0	72.6
2221	Busjohn & Schneider.....	Logansport.....	115.0	72.6
2260	W. H. Porter.....	Logansport.....	121.0	78.0
2305	M. M. Murphy.....	Delphi.....	108.0	76.8
2362	J. D. Bartlett.....	Lafayette.....	113.0	74.7
2696	W. Scott.....	Kokomo.....	107.0	73.2
2391	Schultz & B. Swell.....	Lafayette.....	102.0	76.2
2274	Blue Front Drug Store.....	Tipton.....	95.0	79.2
2832	Francis Pharmacy.....	Indianapolis.....	106.0	78.9
2942	Weber Drug Co.....	Indianapolis.....	108.0	75.1
2960	E. H. Wilson.....	Indianapolis.....	101.0	74.1
3529	W. E. Axline & Co.....	Noblesville.....	118.0	71.7
4097	F. W. Meissner.....	Laporte.....	110.0	93.0

## SPIRITS OF CAMPHOR—ILLEGAL.

679	R. G. Moore.....	Vincennes.....	73.0	62.1
748	E. Shoptaugh.....	Princeton.....	81.0	61.2
749	Clark & Sons.....	Princeton.....	53.0	44.1
758	F. S. Clapp.....	Washington.....	83.0	77.4
824	A. Young.....	Oakland City.....	74.0	61.0
829	A. J. Troutman.....	Oakland City.....	89.0	61.2
841	John Leval & Son.....	Evansville.....	79.0	60.0
856	J. F. Bomm.....	Evansville.....	68.0	77.0
871	Meek & Albers.....	Evansville.....	86.0	75.9
937	Dr. H. Rosenbaum.....	Mt. Vernon.....	62.0	56.4
967	Porter, the Druggist.....	Peru.....	80.0	47.1
985	Blue Drug Store.....	Peru.....	93.0	76.5
1003	Chickasaw Pharmacy.....	Peru.....	90.0	64.4
1012	Bradley Bros.....	Wabash.....	62.0	56.1
1041	Fowler & Kerlin.....	Wabash.....	85.0	51.6
1058	Butterbaugh & Co.....	Wabash.....	85.0	61.2
1116	J. C. Hutzell.....	Ft. Wayne.....	69.0	76.9
1170	Dreier & Bro.....	Ft. Wayne.....	58.5	56.0
1185	H. G. Sommers.....	Ft. Wayne.....	67.0	59.6
1206	Meyer Bros. & Co.....	Ft. Wayne.....	88.0	55.2
1222	Pellins & Lewis.....	Ft. Wayne.....	86.0	53.5
1810	Ashton Staman.....	Auburn.....	88.0	75.8
1832	H. M. Phillips.....	Auburn.....	87.0	54.0
1849	Hammond Bros.....	Elkhart.....	67.0	63.0
1876	Central Drug Store.....	Elkhart.....	67.2	83.0
1902	Lennard & Bentz.....	Elkhart.....	89.0	75.0
1920	H. N. Jenner.....	Goshen.....	87.0	56.0
1956	Public Drug Store.....	South Bend.....	84.0	59.1
1999	O. C. Bostin.....	South Bend.....	62.0	57.0
2113	E. W. Lindeman.....	Michigan City.....	60.0	50.4
2124	Bicknell & Co.....	Hammond.....	90.0	62.4
2038	F. W. Meissner.....	Laporte.....	87.0	67.5
2041	D. C. Peters.....	Laporte.....	82.0	61.5
2149	M. Kolb.....	Hammond.....	89.0	64.5
2175	Corner Drug Store.....	Valparaiso.....	58.0	78.6
2195	W. C. Letherman.....	Valparaiso.....	79.0	76.2
2204	Heineman-Sievers.....	Valparaiso.....	60.0	49.2
2237	Ben Fisher.....	Logansport.....	42.0	56.4
2272	Red Cross Pharmacy.....	Logansport.....	80.0	45.0

## SPIRITS OF CAMPHOR—ILLEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. U. S. P. Strength.	Per Cent. Alcohol.
2290	M. W. Edmonds.....	Delphi.....	90.0	75.3
2312	Lytler & Orr.....	Delphi.....	78.0	64.5
2327	W. W. Johnson.....	Lafayette.....	75.0	68.4
2346	Ragan Bros.....	Lafayette.....	16.0	39.3
2370	Wells-Yeager-Best.....	Lafayette.....	85.0	67.8
2401	Anderson Drug Co.....	Anderson.....	49.0	54.7
2416	J. B. Wehrle.....	Anderson.....	85.0	78.0
2433	City Drug Store.....	Anderson.....	58.0	51.9
2449	Cassel Bros.....	Anderson.....	16.0	34.8
2457	Buck & Brickley.....	Anderson.....	42.0	40.8
2475	H. H. Ice.....	Muncie.....	62.0	78.6
2484	Peoples Drug Store.....	Muncie.....	77.0	51.9
2500	E. P. Whinery.....	Muncie.....	58.0	59.1
2516	V. E. Silverburg.....	Muncie.....	72.0	58.2
2545	Physicians Drug Store.....	Muncie.....	66.0	60.3
2574	City Drug Store.....	Alexandria.....	53.0	52.8
2593	E. C. Robinson.....	Alexandria.....	71.0	45.6
2595	F. C. Jones.....	Alexandria.....	76.0	75.0
2623	F. W. Green.....	Elwood.....	75.0	76.5
2629	J. H. Kute.....	Elwood.....	82.0	62.1
2640	F. L. Saylor.....	Elwood.....	77.0	58.8
2665	W. Cogswell.....	Elwood.....	85.0	77.4
2670	Jay Bros.....	Kokomo.....	62.0	78.0
2686	L. Mehlig.....	Kokomo.....	88.0	60.0
2708	Hollowell & Ryan.....	Kokomo.....	80.0	76.6
2743	T. H. Gethart.....	Kokomo.....	82.0	72.9
2812	H. Mehlig.....	Tipton.....	52.0	62.1
2845	W. M. Birk.....	Indianapolis.....	85.0	58.2
2858	A. B. Carr.....	Indianapolis.....	66.0	59.4
2883	F. H. Carter.....	Indianapolis.....	86.0	76.5
2904	H. J. Huder.....	Indianapolis.....	85.0	54.3
2917	E. W. Stucky.....	Indianapolis.....	58.0	53.2
2927	I. N. Heims.....	Indianapolis.....	76.0	48.9
2972	Navin's Pharmacy.....	Indianapolis.....	33.0	79.5
3491	Frank Ross.....	Noblesville.....	59.0	54.9
3498	C. L. Mitchell.....	Noblesville.....	72.0	76.5
3514	Truitt & Son.....	Noblesville.....	83.0	76.5
3535	A. G. Baldwin.....	Noblesville.....	81.0	60.0

## SYRUP OF IODIDE OF IRON (SYRUPUS FERRI IODIDI).

Of the 56 samples of syrup of iodide of iron analyzed but 9, or 16 per cent., were below standard.

## SYRUP OF IODIDE OF IRON—LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. U. S. P. Strength.
4954	Columbia Drug Co.....	Knightstown.....	160.0
4958	J. H. Trees.....	Knightstown.....	118.0
5007	Dunham & Jacobs.....	Indianapolis.....	106.0
5016	Ed Hoshour.....	Indianapolis.....	186.0
5060	C. G. Mueller.....	Indianapolis.....	104.0
5099	Maas Pharmacy.....	Indianapolis.....	96.0
5107	Owl Pharmacy.....	Indianapolis.....	188.0
5111	Chas. W. Lambert.....	Indianapolis.....	106.0
5121	Hoskins & Miller.....	Indianapolis.....	18.0
5124	B. T. Fisher.....	Indianapolis.....	194.0
5135	B. M. Keene.....	Indianapolis.....	192.0
5143	A. W. Owens.....	Franklin.....	104.0
5193	A. H. Fehring.....	Columbus.....	192.0
5192	H. M. Holmes.....	Columbus.....	196.0

## SYRUP OF IODIDE OF IRON—LEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. U. S. P. Strength.
5258	Nickey Drug Store .....	Muncie.....	194.0
5265	Physicians' Drug Store.....	Muncie.....	184.0
5273	Owl Pharmacy.....	Muncie....	182.0
5276	Stevens & Nicolls.....	Muncie.....	182.0
5283	D. B. Campbell.....	Muncie.....	96.0
5355	D. G. Graham.....	Veedersburg.....	102.0
5679	F. E. Ross.....	Noblesville.....	180.0
5695	City Drug Store.....	Elwood.....	196.0
5720	F. A. Mason.....	Marion.....	180.0
5737	Hildebrand & Ansley.....	Marion.....	190.0
5768	Leo Eliel.....	South Bend.....	98.0
5769	J. W. Papozinski.....	South Bend.....	182.0
5771	G. E. Cimmerman.....	South Bend.....	170.0
5772	Economical Drug Store.....	South Bend.....	186.0
5773	Robert Milton.....	South Bend.....	184.0
5774	Henry L. Spohn.....	South Bend.....	93.0
5775	E. A. Schiffer.....	South Bend.....	196.0
5776	Public Drug Store.....	South Bend.....	100.0
5777	R. Fink.....	South Bend.....	180.0
5779	Otto J. Klaer.....	South Bend.....	138.0
5780	R. H. Russ.....	South Bend.....	196.0
5782	Meyers' Drug Store.....	South Bend.....	112.0
5784	V. Neidbalski.....	South Bend.....	192.0
5785	Fred A. Kusel.....	South Bend.....	196.0
5786	W. M. Patterson.....	South Bend.....	102.0
5787	White's Pharmacy.....	South Bend.....	96.0
5788	Otto C. Bastian.....	South Bend.....	186.0
5789	G. A. Senrich & Co.....	South Bend.....	94.0
5790	Louis C. Kreidler.....	South Bend.....	186.0
5791	L. E. Kinsey & Co.....	New Castle.....	110.0
5792	Geo. F. Morer.....	New Castle.....	178.0
5793	W. M. Pence.....	New Castle.....	186.0
5794	Daniel Stewart.....	Indianapolis.....	110.0

## SYRUP OF IODIDE OF IRON—ILLEGAL.

5150	D. H. Miller .....	Franklin.....	86.0
5183	Crescent Drug Store.....	Columbus.....	52.0
5297	E. T. Brickley.....	Anderson.....	54.0
5301	Anderson Drug Co.....	Anderson.....	58.0
5690	S. Rosenthal.....	Tipton.....	88.0
5770	H. E. Freehafer & Co.....	South Bend.....	90.0
5778	E. A. Fink.....	South Bend.....	88.0
5781	Central Pharmacy.....	South Bend.....	82.0
5783	Chas. Coonley & Co.....	South Bend.....	74.0

## TINCTURE OF ARNICA—TINCTURA ARNICAE.

Nine of the 81 samples of tincture of arnica analyzed were prepared with methyl alcohol.

## TINCTURE OF ARNICA—ILLEGAL.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. Methyl Alcohol.	Per Cent. Ethyl Alcohol.
1015	Bradley Bros.....	Wabash.....	35.4	1.8
698	C. S. Miller.....	Vincennes.....	32.4	3.2
1160	Ranke & Nussbaum.....	Ft. Wayne.....	31.3	8.1
1191	H. G. Sommers.....	Ft. Wayne.....	40.7	
2230	B. Fisher.....	Logansport.....	28.7	22.5
2570	City Drug Store.....	Alexandria.....	2.1	32.3
2916	E. W. Stucky.....	Indianapolis.....	33.3	7.5
2977	Navin's Pharmacy.....	Indianapolis.....	31.15	5.9

## TINCTURE OF IODINE (TINCTURA IODI).

But 21 out of 133 samples of tincture of iodine analyzed were of full strength. This corresponds to 84.2 per cent. adulteration. The fault is doubtless in the method of preparation, neglect to use the proper quantities of iodine and potassium iodide, or incomplete solution of the chemicals.

## TINCTURE OF IODINE—LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. of Purity.
3894	Chas. D. Knoefel .....	New Albany .....	104.5
3903	Chas. E. Crecelius .....	New Albany .....	171.8
5117	Chas. W. Lambert .....	Indianapolis .....	132.0
5164	Theo. Otto .....	Columbus .....	101.8
5832	Geo. Loesche .....	Ft. Wayne .....	137.9
5875	Ed. Mertz .....	Ft. Wayne .....	101.0
5990	F. E. Dilley .....	Brazil .....	104.3
5997	H. L. Neidlinger .....	Brazil .....	138.3
6014	J. A. Bickel .....	Goshen .....	109.4
6100	Public Drug Store .....	South Bend .....	106.5
6146	Senrich & Co .....	South Bend .....	102.4
6150	Samuel T. Applegate .....	South Bend .....	110.7
6154	Leo Eliel .....	South Bend .....	106.1
6163	McDonald-Stockdell .....	New Albany .....	106.5
6305	Averitt & Dorsey .....	Terre Haute .....	101.7
6345	T. H. Boyds .....	Lafayette .....	100.0
6374	Jos. W. Weiss .....	Hammond .....	100.2
6388	W. H. Williams .....	Valparaiso .....	106.8
6465	G. D. Keith .....	Rochester .....	129.3
6499	M. W. Hamaker .....	Peru .....	105.7
6535	Ed. M. Moran .....	Michigan City .....	108.3

## TINCTURE OF IODINE—ILLEGAL.

524	Shultz & Co .....	Brazil .....	80.0
696	C. S. Miller .....	Vincennes .....	63.8
820	A. Young .....	Oakland City .....	65.0
893	H. J. Schlaepfer .....	Evansville .....	83.9
1031	R. E. Clark .....	Wabash .....	65.0
1113	J. C. Hutzell .....	Ft. Wayne .....	90.6
3840	Gentry Drug Store .....	Bloomington .....	79.5
3845	C. O. Maple .....	Bloomington .....	61.6
3861	Bowles Bros .....	Bloomington .....	86.2
3882	John W. O'Harrow .....	Bloomington .....	91.1
1807	Ashton Staman .....	Auburn .....	55.6
1982	C. Coonley & Co .....	South Bend .....	74.3
3880	Wm. C. Pfau .....	Jeffersonville .....	85.5
3885	Schwanninger Bros .....	Jeffersonville .....	80.3
3910	McDonald-Stockdell Co .....	New Albany .....	40.8
3915	Conner's Drug Store .....	New Albany .....	81.3
3923	Floyd Parks .....	Jeffersonville .....	80.3
3930	Doherty's Drug Store .....	Jeffersonville .....	67.2
4947	A. C. Fouche .....	Knightstown .....	72.8
4951	Smith & Brown .....	Knightstown .....	70.8
4971	Dr. W. A. Johnston .....	Cambridge City .....	58.0
5006	Dunham & Jacobs .....	Indianapolis .....	23.5
5032	Morgan & Dick .....	Crawfordsville .....	85.7
5080	F. T. Mills .....	Cambridge City .....	64.7
5471	John A. Hook .....	Indianapolis .....	87.6
5095	W. H. Kern .....	Indianapolis .....	60.3
5100	Maas Pharmacy .....	Indianapolis .....	73.5
5108	Owl Pharmacy .....	Indianapolis .....	83.8
5122	Hoskins & Miller .....	Indianapolis .....	79.8
5128	B. T. Fisher .....	Indianapolis .....	87.8
5131	G. T. Traub .....	Indianapolis .....	57.7

## TINCTURE OF IODINE—ILLEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. of Purity.
5134	B. M. Keene	Indianapolis	87.6
5136	R. C. Wood	Franklin	75.3
5141	A. W. Owen	Franklin	79.5
5149	D. H. Miller	Franklin	95.7
5175	A. H. Febring	Columbus	95.6
5178	Crescent Drug Store	Columbus	75.5
5186	Ernst Stahlhut	Columbus	76.4
5191	H. M. Holmes	Columbus	65.4
5198	Phoenix Drug Store	Columbus	72.6
5201	Lytle's Corner Pharmacy	Rushville	85.5
5264	Physicians' Drug Store	Muncie	40.0
5271	Wal Drug Store	Muncie	81.5
5275	Stevens & Nicolls	Muncie	68.8
5281	Walker Bros.	Muncie	79.0
5292	City Drug Store	Anderson	30.0
5675	A. W. Truitt	Noblesville	41.9
5681	H. Mehlig	Tipton	78.0
5704	King Drug Store	Elwood	76.0
5715	City Drug Store	Alexandria	83.7
5718	Model Drug Store	Alexandria	61.9
5723	Bradley Bros.	Marion	98.0
5728	Evans	Marion	62.6
5734	Davis Drug Store	Marion	95.1
5736	Hildebrand & Ansley	Marion	67.4
5740	A. W. Leedy	Marion	80.0
5749	F. H. Gerhart	Kokomo	88.8
5754	G. E. Meek	Kokomo	59.0
5821	Meyer Bros.	Ft. Wayne	76.8
5812	Christian Bros.	Ft. Wayne	75.0
5855	H. F. Beverforden	Ft. Wayne	61.8
5866	L. J. Zollinger	Ft. Wayne	96.8
5907	T. D. Hohan	Ft. Wayne	65.1
5991	N. M. Mendenhall	Brazil	76.1
5993	S. Herr	Brazil	77.9
5994	F. M. Schultz	Brazil	71.0
6000	T. W. Inglehart	Brazil	73.9
6068	Houseworth Bros.	Elkhart	72.2
6121	H. L. Spohn	South Bend	60.0
6164	J. E. C. F. Harper	Madison	38.0
6165	C. R. McLeland	Madison	88.9
6166	J. P. McDermont	Madison	57.8
6289	Fred Keller	Brazil	36.6
6384	Geo. Reiss	Terre Haute	45.0
6286	G. W. J. Hoffman	Terre Haute	75.3
6288	E. Hampton	Terre Haute	68.4
6290	City Hall Pharmacy	Terre Haute	81.6
6300	Wm. P. Henner	Terre Haute	95.1
6302	Red Cross Pharmacy	Terre Haute	98.8
6304	R. H. Burns & Son	Terre Haute	75.7
6307	Cook & Black	Terre Haute	82.7
6309	Big Four Pharmacy	Terre Haute	88.9
6310	C. T. Dawson	Terre Haute	58.9
6317	Otto C. Bastian	South Bend	67.5
6328	E. C. Zahrt	Laporte	73.9
6339	F. W. Meissner	Laporte	88.9
6352	A. E. Kepert	Hammond	95.5
6359	E. R. Stanferr	Hammond	74.6
6364	M. Kolb	Hammond	78.3
6381	Ben S. Wallick	Valparaiso	97.5
6402	Corner Drug Store	Valparaiso	53.8
6408	Peoples Drug Store	Plymouth	64.0
6415	L. Tanner	Plymouth	41.5
6431	Geo. Vinal	Plymouth	75.0
6438	W. Rinard	Plymouth	90.7
6445	Shore & Wilson	Rochester	34.0
6451	Edw. Fieser	Rochester	53.0
6458	Geo. V. Dawson	Rochester	40.8
6477	R. E. Murphy	Peru	86.3
6493	Blue Drug Store	Peru	81.6
6506	Porter, the Druggist	Peru	62.2
6517	Thieband & Co.	Peru	87.4
6521	City Drug Store	Michigan City	75.3
6527	E. W. Lindeman	Michigan City	84.9

## TINCTURE OF IODINE—ILLEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. of Purity.
6544	Kramer Drug Store.....	Michigan City.....	89.4
6550	Otto Klopfer.....	Michigan City.....	76.4
6556	L. Mattern.....	Whiting.....	32.9
6568	Whiting Drug Store.....	Whiting.....	83.7
6575	Otto Negele.....	Hammond.....	94.4
6587	Bicknell & Co.....	Hammond.....	54.1
6594	Sommers.....	Hammond.....	80.3

## TINCTURE OF IRON (TINCTURA FERRI CHLORIDI).

Of 177 samples analyzed 138, or 78.5 per cent., were below the U. S. P. standard of not less than 13.28 per cent. of anhydrous ferric chloride. The low percentage of iron may be due to the use of impure chemicals, incomplete solution, or carelessness in preparation. We have prepared several samples according to the official U. S. P. method and had no trouble in producing a normal article.

## TINCTURE OF IRON—LEGAL.

Laboratory Number.	Retailer.	Where Collected.	Specific Gravity.	Percentage Purity.	Remarks.
496	S. Herr.....	Brazil.....	.9436	125.1	Pure.
513	Fred Keller.....	Brazil.....	1.0483	112.9	Pure.
707	I. J. Biggs.....	Princeton.....	.9723	142.6	Pure.
725	E. Shoptaugh.....	Princeton.....	.9402	112.9	Pure.
750	Clark & Sons.....	Princeton.....	.9673	138.8	Pure.
798	J. N. Jones.....	Washington.....	.9975	170.0	Pure.
861	J. F. Bomm.....	Evansville.....	.9797	159.5	Pure.
936	Joe Haney.....	Peru.....	.9685	142.6	Pure.
969	Blue Drug Store.....	Peru.....	.9814	133.5	Pure.
1112	J. C. Hutzell.....	Fort Wayne.....	1.0147	166.6	Pure.
1923	H. N. Jenner.....	Goshen.....	.9791	148.6	Pure.
2377	Wells-Yaeger-Best Co.....	Lafayette.....	.9540	153.5	Pure.
2501	E. P. Whinney.....	Muncie.....	.9740	140.9	Pure.
2756	F. H. Hubbard.....	Kokomo.....	1.0326	179.7	Pure.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. U. S. P. Strength.
4946	A. C. Fouche.....	Knightstown.....	108.0
4957	J. H. Trees.....	Knightstown.....	100.2
5096	Maas Pharmacy.....	Indianapolis.....	112.2
5114	Chas. W. Lambert.....	Indianapolis.....	101.2
5153	W. B. McCullough.....	Franklin.....	110.9
5163	Theo. Otto.....	Columbus.....	100.0
5172	A. H. Fehring.....	Columbus.....	104.4
5321	J. P. Buckner.....	Covington.....	106.2
5397	Henry L. Spohn.....	South Bend.....	100.0

## TINCTURE OF IRON—LEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. U. S. P. Strength.
5400	Robert P. Milton .....	South Bend .....	100.0
5406	Economical .....	South Bend .....	100.0
5410	R. Fink .....	South Bend .....	125.1
5742	Meek Drug Store .....	South Bend .....	123.7
5848	C. L. Thompson .....	Danville .....	108.2
6088	Public Drug Store .....	South Bend .....	106.8
6155	Leo Eliel .....	South Bend .....	102.5
6294	Red Cross Pharmacy .....	Terre Haute .....	102.5
6301	Averitt & Dorsey .....	Terre Haute .....	123.1
6329	E. C. Zahrt .....	Laporte .....	108.7
6346	T. H. Boyds .....	Laporte .....	118.9
6353	A. E. Keper .....	Hammond .....	145.0
6500	M. W. Hamaker .....	Peru .....	101.2
6505	Porter the Druggist .....	Peru .....	112.5
6545	Kramer Drug Store .....	Michigan City .....	101.2
6575	Otto Negele .....	Hammond .....	105.6

## TINCTURE OF IRON—ILLEGAL.

549	Bunton Drug Co .....	Terre Haute .....	99.4
637	E. H. Robinson .....	Terre Haute .....	65.5
821	A. Young .....	Okland City .....	53.5
4852	Smith & Brown .....	Knightstown .....	89.6
5008	Dunham & Jacobs .....	Indianapolis .....	57.3
5034	Morgan & Dick .....	Crawfordsville .....	88.4
5056	Dean House Pharmacy .....	Cambridge City .....	86.6
5070	J. N. Marson .....	Cambridge City .....	89.6
5075	John S. Hook .....	Indianapolis .....	92.0
5081	C. G. Mueller .....	Indianapolis .....	44.1
5084	W. H. Kern .....	Indianapolis .....	73.1
5094	Owl Pharmacy .....	Indianapolis .....	88.4
5110	Hoskins Pharmacy .....	Indianapolis .....	62.2
5120	B. F. Fisher .....	Indianapolis .....	81.1
5127	R. B. Wood .....	Franklin .....	94.0
5138	A. C. Owen .....	Franklin .....	86.6
5140	D. H. Miller .....	Franklin .....	78.6
5148	Crescent Drug Store .....	Columbus .....	76.2
5179	Krust Stahlhut .....	Columbus .....	97.5
5185	H. M. Holmes .....	Columbus .....	67.0
5189	Phoenix Drug Store .....	Columbus .....	86.6
5196	E. P. Whinery .....	Muncie .....	54.8
5246	Andrews Drug Store .....	Muncie .....	64.0
5249	H. H. Ice .....	Muncie .....	70.1
5251	M. Stewart .....	Muncie .....	88.4
5255	Owl Drug Store .....	Muncie .....	79.2
5272	Walker Bros .....	Muncie .....	86.6
5280	Henderson Drug Co .....	Anderson .....	46.3
5286	Carrell Bros .....	Anderson .....	84.1
5290	Anderson Drug Co .....	Anderson .....	85.9
5300	Geo. D. Cook .....	Covington .....	68.3
5317	H. Senger .....	Veedsburg .....	73.1
5346	W. H. Wallace .....	Veedsburg .....	45.9
5353	A. M. Booe .....	Veedsburg .....	60.9
5357	H. E. Freehafer & Co .....	South Bend .....	74.3
5390	Fred A. Kusel .....	South Bend .....	90.7
5391	J. W. Papozinski .....	South Bend .....	68.8
5392	Corner Drug Store .....	New Castle .....	25.1
5393	Mewer's Drug Store .....	South Bend .....	20.1
5394	Central Pharmacy .....	South Bend .....	82.5
5395	White's Pharmacy .....	South Bend .....	75.9
5396	Leo Eliel .....	South Bend .....	70.0
5398	G. A. Senrich & Co .....	South Bend .....	72.7
5399	Applegate's Pharmacy .....	South Bend .....	75.4
5401	Public Drug Store .....	South Bend .....	57.9
5402	W. M. Patterson .....	South Bend .....	73.8
5403	L. E. Kinsey .....	New Castle .....	33.8
5404	E. A. Fink .....	South Bend .....	75.4
5405	Louis Kreidler .....	South Bend .....	94.0
5407	W. M. Pence .....	New Castle .....	32.7
5408	Otto C. Bastian .....	South Bend .....	71.5
5409	Meyer's Drug Store .....	South Bend .....	87.4
5411			

## TINCTURE OF IRON—ILLEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. U. S. P. Strength.
5412	E. A. Schiffer	South Bend	72.7
5413	V. Neidbalski	South Bend	95.6
5414	R. H. Kuss & Co.	South Bend	89.0
5415	Otto J. Klaer	South Bend	61.2
5416	Chas. Coonley	South Bend	59.5
5417	Cimmerman's Pharmacy	South Bend	30.0
5418	Beam & Lynn	New Castle	38.2
5672	A. G. Baldwin	Noblesville	70.1
5677	A. W. Truitt	Noblesville	44.5
5686	J. C. Lindsey	Tipton	86.0
5689	Red Cross Drug Store	Tipton	92.7
5699	F. W. Green	Elwood	88.4
5711	Dr. F. L. Saylor	Elwood	96.3
5713	E. C. Robinson	Alexandria	89.7
5719	Model Drug Store	Alexandria	64.0
5720	W. H. Bireley	Alexandria	84.2
5722	Bradley Bros	Marion	83.5
5730	Evans	Marion	84.2
5732	Davis Drug Store	Marion	62.2
5735	Hildebrand & Ansley	Marion	98.1
5739	A. W. Leedy	Marion	92.7
5744	Jay Bros	Kokomo	59.1
5751	C. O. Scott	Kokomo	97.6
5755	T. H. Hubbard	Kokomo	81.0
5819	Lay & Hawthorne	Indianapolis	38.0
5820	Meyer Bros Drug Co.	Pt. Wayne	81.2
5833	Geo. Loesche	Pt. Wayne	58.1
5843	Christian Bros	Pt. Wayne	65.6
5853	H. F. Beverforden	Pt. Wayne	89.3
5867	L. J. Zollinger	Pt. Wayne	90.0
5876	Ed. Mertz	Pt. Wayne	89.3
5906	F. D. Hohann	Pt. Wayne	81.2
5947	J. W. West	Danville	88.1
5952	J. C. Marsh	Danville	95.6
5957	C. O. Haines	Danville	88.1
5959	C. C. Gottier	Greencastle	68.1
5961	J. E. Dunlavy	Greencastle	94.3
5967	W. W. Jones	Greencastle	96.2
5969	Badger & Green	Greencastle	96.2
5981	C. C. Gottier	Greencastle	88.6
5983	W. Allen	Greencastle	95.0
5989	F. C. Dilley	Brazil	75.0
5992	I. Herr	Brazil	87.5
5995	F. W. Schultz	Brazil	95.7
5996	O. K. Horner	Brazil	83.1
5998	T. W. Inglehart	Brazil	76.8
6001	H. L. Neidlinger	Brazil	65.0
6015	J. A. Bichel	Goshen	98.7
6069	Houseworth Bros	Elkhart	93.1
6122	H. L. Spohn	South Bend	86.2
6145	Senrich & Co.	South Bend	92.1
6149	Samuel T. Applegate	South Bend	95.0
6263	N. M. Mendenhall	Brazil	83.7
6270	Fred Keller	Brazil	53.1
6283	Geo. Reist	Torre Haute	56.2
6285	G. W. J. Hoffman	Torre Haute	88.1
6287	C. Hampton	Torre Haute	82.5
6289	City Hall Pharmacy	Torre Haute	65.0
6299	W. M. Henner	Torre Haute	72.5
6303	R. H. Burns & Son	Torre Haute	61.9
6306	Black & Cook	Torre Haute	68.7
6308	Big Four Pharmacy	Torre Haute	90.6
6311	C. T. Dawson	Torre Haute	57.1
6316	Otto C. Bastian	South Bend	95.6
6340	F. W. Meisner	Laporte	84.3
6360	E. R. Stanfer	Hammond	80.0
6367	M. Kolb	Hammond	96.8
6375	Jos. W. Weise	Hammond	68.7
6382	Ben S. Wallick	Hammond	45.0
6403	Newland Drug Store	Valparaiso	95.0
6409	Peoples Drug Store	Plymouth	74.4
6416	L. Tanner	Plymouth	81.8
6432	Shadel's Drug Store	Plymouth	86.2
6459	W. Rinard	Plymouth	88.1



## TINCTURE OF IRON—ILLEGAL—Continued.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. U. S. P. Strength.
6446	Shore & Wilson .....	Rochester .....	71.2
6452	Ed. W. Fieser .....	Rochester .....	44.3
6466	G. D. Keith .....	Rochester .....	70.6
6478	R. E. Murphy .....	Peru .....	51.2
6492	Blue Drug Store .....	Peru .....	87.0
6515	Thieband & Co. ....	Peru .....	95.0
6528	E. W. Lindeman .....	Michigan City .....	73.7
6536	Ed. M. Moran .....	Michigan City .....	96.0
6551	Otto Kloefer .....	Michigan City .....	95.6
6557	L. H. Mattern .....	Whiting .....	71.2
6567	Whiting Drug Co. ....	Whiting .....	78.8
6588	Bicknell & Co. ....	Hammond .....	93.7
6593	Sommers Drug Co. ....	Hammond .....	72.5

## MISCELLANEOUS DRUGS.

We have devoted some time to the examination of drugs in the form of chemicals commonly carried in stock by druggists. The samples analyzed were for the most part of good quality.

Of the seven samples of potassium iodide all were pure and up to the standard. Of the nine samples of potassium chlorate five were pure and four below standard. Two of the three samples of zinc sulfate were pure. The third sample, although pure, was improperly labeled.

All the fourteen samples of boric acid were pure, as were the seven samples of sodium phosphate, the four samples of Rochelle salts, and single samples of tartaric and salicylic acids.

## BORIC ACID—LEGAL.

Laboratory Number.	Retailers.	Where Collected.	Percentage Purity.	Remarks.
815	C. Kightly .....	Oakland City .....	100.	Pure.
825	A. Young .....	Oakland City .....	99.9	Pure.
852	John Laval & Son .....	Evansville .....	100.	Pure.
1150	C. B. Woodworth & Co. ....	Ft. Wayne .....	100.	Pure.
1166	Ranke & Nussbaum .....	Ft. Wayne .....	99.9	Pure.
1177	Dreier & Bro .....	Ft. Wayne .....	99.8	Pure.
1227	Pellens & Lewis .....	Ft. Wayne .....	98.9	Pure.
2154	M. Kolb .....	Hammond .....	99.4	Pure.
2407	Anderson Drug Co. ....	Anderson .....	98.7	Pure.
2784	Moore Bros .....	Tipton .....	100.	Pure.
2891	F. H. Carter .....	Indianapolis .....	99.2	Pure.
2921	E. W. Stucky .....	Indianapolis .....	99.9	Pure.
2952	Weber Drug Co. ....	Indianapolis .....	100.	Pure.
2968	E. H. Wilson .....	Indianapolis .....	100.	Pure.

## POT. CHLORATE—LEGAL.

Laboratory Number.	Retailers.	Where Collected.	Remarks.
1049	Fowler & Kerlin .....	Wabash .....	Pure.
1125	J. C. Hutzell .....	Ft. Wayne .....	Pure.
1148	C. B. Woodworth & Co .....	Ft. Wayne .....	Pure.
1162	Ranke & Nussbaum .....	Ft. Wayne .....	Pure.
2251	G. W. Hoffman .....	Logansport .....	Pure.

## POT. CHLORATE—ILLEGAL.

1101	Schaefer & Schaefer .....	Huntington .....	Not Pure.
1913	Leonard & Bents .....	Elkhart .....	Not Pure.
1979	Meyers Drug Store .....	South Bend .....	Not Pure.
2368	Wells-Yaeger-Best Co. ....	Lafayette .....	Not Pure.

## SODA PHOSPHATE—LEGAL.

770	S. F. Clapp .....	Washington .....	Pure.
805	J. N. Jones .....	Washington .....	Pure.
900	H. J. Schlaepfer .....	Evansville .....	Pure.
1034	R. E. Clark .....	Wabash .....	Pure.
1062	M. Kaylor .....	Huntington .....	Pure.
1224	Pellens & Lewis .....	Ft. Wayne .....	Pure.
3842	Gentry Drug Store .....	Bloomington .....	Pure.

## ROCHELLE SALTS—LEGAL.

1226	Pellens & Lewis .....	Ft. Wayne .....	Pure.
2083	Woodson & Willits .....	Michigan City .....	Pure.
2197	W. C. Leatherman .....	Valparaiso .....	Pure.
2423	J. B. Wehrle .....	Anderson .....	Pure.

## POT. IODIDE—LEGAL.

963	Joe Haney .....	Peru .....	Pure.
974	Porter the Druggist .....	Peru .....	Pure.
994	Blue Drug Store .....	Peru .....	Pure.
1081	M. Kaylor .....	Huntington .....	Pure.
1180	Dreier & Bro. ....	Ft. Wayne .....	Pure.
1181	Central Drug Store .....	Elkhart .....	Pure.
2657	W. Cogswell .....	Elwood .....	Pure.

## ZINC SULFATE—LEGAL.

901	H. J. Schlaepfer .....	Evansville .....	Pure.
1083	M. Kaylor .....	Huntington .....	Pure but im- properly la- beled.
1225	Pellens & Lewis .....	Ft. Wayne .....	Pure.

## SALICYLIC ACID—LEGAL.

849	John Laval & Son .....	Evansville .....	Pure.
-----	------------------------	------------------	-------

## PRECIPITATED SULPHUR—ILLEGAL.

Laboratory Number.	Retailer.	Where Collected.	Per Cent. of Sulphur.	Per Cent. of Calcium Sulfate.	Remarks.
715	I. J. Biggs .....	Princeton .....	51.3	48.7	Adulterated.
780	A. F. Schmidt .....	Washington .....	54.1	45.9	Adulterated.
836	A. G. Troutman .....	Oakland City .....	51.9	48.1	Adulterated.
866	J. F. Bomm .....	Evansville .....	51.1	48.9	Adulterated.
880	Meek & Albers .....	Evansville .....	48.6	48.6	Adulterated.
978	Porter the Druggist .....	Peru .....	51.5	48.5	Adulterated.
1096	Schaefer & Schaefer .....	Huntington .....	50.9	49.1	Adulterated.
1161	Ranke & Nussbaum .....	Ft. Wayne .....	53.6	46.4	Adulterated.
1181	Dreier & Bro. ....	Ft. Wayne .....	49.8	50.2	Adulterated.
1828	H. B. McCord .....	Auburn .....	94.3	5.7	Adulterated.
1842	H. M. Phillips .....	Auburn .....	54.0	46.0	Adulterated.
1878	Central Drug Store .....	Elkhart .....	51.0	49.0	Adulterated.
1894	F. J. Goldman .....	Elkhart .....	50.7	49.3	Adulterated.
1911	Leonard & Bentz .....	Elkhart .....	51.8	48.2	Adulterated.
1995	C. Conley & Co. ....	South Bend .....	50.8	49.2	Adulterated.
2049	J. M. Callender .....	Laporte .....	51.4	48.6	Adull rated.
2060	T. H. Boyd & Co. ....	Laporte .....	54.1	45.9	Adulterated.
2153	Corner Drug Store .....	Valparaiso .....	51.8	48.2	Adulterated.
2706	W. Scott .....	Kokomo .....	53.7	46.3	Adulterated.
4143	Francis Pharmacy .....	Indianapolis .....	52.1	47.9	Adulterated.

## TARTARIC ACID—ILLEGAL.

Laboratory Number.	Retailer.	Where Collected.	Remarks.
2356	J. D. Bartlett .....	Lafayette .....	Sodium sulfate present. Adulterated.

## INSPECTION OF GROCERY STORES, MARKETS AND SLAUGHTER HOUSES.

Freedom from adulteration is an important requisite in foods. It is of even greater importance that the foods be handled in a cleanly manner, protected from dirt and flies, and kept from the outside contamination that is often more to be feared than mere adulteration. Proper care of stores and markets can only be secured at the price of eternal vigilance of the health officer or food inspector. Several cities of the State, notably Indianapolis, Crawfordsville, Ft. Wayne and Columbus, through local inspectors have done much to abolish filthy conditions and have secured reasonably satisfactory results. The State Food Inspectors have made note of the conditions of the stores and markets which they visited during the summer of 1906. Their instructions were

to note the general condition of the stores as to cleanliness, the way in which stock was cared for, as to protection from flies, dirt, etc., the condition of the rear room or store room in the back, and the condition of the refrigerator, taking special pains to notice its odor and appearance. The reports handed in by inspectors are given below:

#### INDIANAPOLIS.

Minnesota Grocery Co., 1037 E. Washington. Inspected August 21, 1906. Floor clean; rear clean; dried fruit wormy; other goods satisfactory.

Carter & Schober, 911 E. Washington. Inspected August 21, 1906. Floor clean; refrigerator clean and free from odor.

Henry Prange, 620 E. Washington. Inspected August 21, 1906. Floor and wall clean; goods satisfactory.

Harrig's Grocery, 617 E. Washington. Inspected August 21, 1906. Floors and wall clean; goods satisfactory.

Frank Lindeman, 410 E. Washington. Inspected August 21, 1906. Floor clean; goods and rear room rather dirty.

Standard Grocery, 358 E. Washington. Inspected August 21, 1906. Floor clean; rear satisfactory.

Court House Grocery, corner Washington and Alabama. Inspected August 21, 1906. Floor clean; goods clean; meats rather dirty and mussy.

Chas. H. Rinne, 344 W. Washington. Inspected August 21, 1906. Floor, goods and refrigerator clean.

D. Dugan, 411 W. Washington. Inspected August 21, 1906. Floor clean; goods dirty.

Day's Aurora Tea Store. Inspected August 21, 1906. Floor clean; goods dirty.

Chas. Schwier, 1016 E. Washington. Inspected August 21, 1906. Floor dirty; refrigerator filthy; uses newspapers to wrap bread, etc.

John Spier, 940 E. Washington. Inspected August 21, 1906. Floor and goods clean.

I. Prince, 225 Massachusetts avenue. Inspected August 22, 1906. Goods dirty; floor dirty; refuse in rear; fly specks everywhere.

R. M. Mueller, corner Delaware and New York streets. Inspected August 22, 1906. Floors and goods in excellent condition.

Consumer's Grocery Co., 305 Massachusetts avenue. Inspected August 22, 1906. Goods in satisfactory condition; rear part of store dirty; dead flies thick.

C. W. Verbar, 539 Massachusetts avenue. Inspected August 22, 1906. Goods and floor clean; refrigerator clean.

J. Sutphen, 531 Massachusetts avenue. Inspected August 22, 1906. Floor clean; goods rather dirty.

F. Stahlut, 547 Massachusetts avenue. Inspected August 22, 1906. Floor and goods clean.

Frank Gross, 642-644 Massachusetts avenue. Inspected August 22, 1906. Excellent condition.

Wm. Ball, 940 Massachusetts avenue. Inspected August 22, 1906. Floor clean; walls and goods dirty and fly specked.

J. H. Kahn, 901 Massachusetts avenue. Inspected August 22, 1906. Floor, goods and refrigerator clean.

A. A. Scott, 870 Massachusetts avenue. Inspected August 22, 1906. Floor clean; goods dirty.

Standard Grocery Co., 766 Massachusetts avenue. Inspected August 22, 1906. Floor and goods clean; refrigerator dirty.

Thos. Nevens, 735 Massachusetts avenue. Inspected August 22, 1906. Everything sticky and dirty; filthy.

N. A. Moore, corner Illinois and Ohio streets. Inspected August 23, 1906. Excellent condition; goods, floor and walls very clean; refrigerator clean and sweet.

M. C. Shea & Co., 219-223 N. Illinois street. Inspected August 23, 1906. Floor clean; refrigerator clean; rear room very clean.

Stone & Bussey, 503 N. Illinois street. Inspected August 23, 1906. Floor clean; goods clean; refrigerator satisfactory; rear part rather dirty.

J. M. Carvin & Son, 606 N. Illinois street. Inspected August 23, 1906. Goods, floor and rear clean.

Chas. Rallsback, 738 N. Illinois street. Inspected August 23, 1906. Goods fairly clean but fly specked; floor rather dirty.

P. J. Ryan, 843 N. Illinois street. Inspected August 23, 1906. Goods in satisfactory condition; floor clean.

Con. Bauer, corner Capitol and Indiana avenue. Inspected August 23, 1906. Store fairly clean; refrigerator smeary and sticky.

W. A. Schofield, 1516 Central avenue. Inspected August 23, 1906. Floors and goods clean; refrigerator satisfactory.

Purfeerst & Miller, 1601 N. Alabama street. Inspected August 23, 1906. Floors clean; goods in good condition; refrigerator in excellent shape.

M. Olifford, 225-227 E. Sixteenth street. Inspected August 23, 1906. Floors clean and goods in satisfactory condition.

Glick & Shane, corner Sixteenth and Illinois streets. Inspected August 23, 1906. Floor, goods and refrigerator clean.

C. F. Volkening, 1301 N. Illinois street. Inspected August 23, 1906. Floor clean; goods in fairly good condition; refrigerator fair.

A. W. Berryhill, 1003-1005 N. Illinois street. Inspected August 23, 1906. Floor, goods and refrigerator clean.

Columbia Grocery Co., corner Illinois and Market streets. Inspected August 23, 1906. Floor, goods and refrigerator clean.

W. Y. Heller, 1303 Oliver avenue. Inspected August 24, 1906. Floor and goods clean; refrigerator in excellent condition.

Grubb & Co., 1306 Oliver avenue. Inspected August 24, 1906. Floor and goods clean; refrigerator ill smelling.

Carl Gising, 1267 Oliver avenue. Inspected August 24, 1906. Floor clean; goods in satisfactory condition; refrigerator clean.

E. A. Allen, 1236 Oliver avenue. Inspected August 24, 1906. Goods and floor clean.

Duncan & McJenkins, 1239 Oliver avenue. Inspected August 24, 1906. Goods in good condition; refrigerator clean.

C. W. Dill, 1230 Oliver avenue. Inspected August 24, 1906. Goods, floor and refrigerator clean.

Martin & Anderson, 1133 Oliver avenue. Inspected August 24, 1906. Goods, floor and refrigerator clean.

C. L. Schindler, 1081 Oliver avenue. Inspected August 24, 1906. Floor clean; goods clean; refrigerator and meat satisfactory.

Geo. Bredewater, 1031 Oliver avenue. Inspected August 24, 1906. Floor, refrigerator and goods clean.

Schooler & Goldsberry, 2703 College avenue. Inspected August 24, 1906. Goods clean; floor clean; refrigerator satisfactory; place in excellent condition.

Gosney Bros., 2713 Ashland avenue. Inspected August 24, 1906. Floor and goods clean; rear part rather dirty.

H. E. Gaddis, 2403 College avenue. Inspected August 24, 1906. Floor, goods and refrigerator clean.

Beckerich Bros., 2128 College avenue. Inspected August 24, 1906. Goods and floor clean; refrigerator satisfactory.

Robt. Keller, 1076 S. East street. Inspected August 25, 1906. Goods, floor and refrigerator clean.

R. Freund & Co., 1033 S. East street. Inspected August 25, 1906. Goods and floor satisfactory; refrigerator clean.

John Stevens, 501 Buchanan street. Inspected August 25, 1906. Floor and goods dirty; rear part dirty; open buckets of preserved fruits have flies in them.

M. Roth, 933 S. East street. Inspected August 25, 1906. Refrigerator clean; satisfactory.

F. T. Meyer & Co., 802-806 S. East street. Inspected August 25, 1906. Floor clean; refrigerator satisfactory.

H. E. Schortemeler, 602 S. East street. Inspected August 25, 1906. Floor clean; goods fair; refrigerator fairly clean.

Geo. Amt, 353 Virginia avenue. Inspected August 25, 1906. Goods and floor clean; refrigerator clean.

F. E. George, 1110 Shelby street. Inspected August 27, 1906. Goods and floor clean.

Enterprise Grocery, 1058 Virginia avenue. Inspected August 27, 1906. Floor, goods and refrigerator clean.

Cook & Co., 1036 Virginia avenue. Inspected August 27, 1906. Floor and goods clean; refrigerator satisfactory.

Arnholter Bros., 948 Virginia avenue. Floor and goods clean; refrigerator clean.

C. Behnke, 840 Virginia avenue. Inspected August 27, 1906. Goods and floor clean; rear excellent.

C. H. & E. H. Schrader, 803 Virginia avenue. Inspected August 27, 1906. Floor and goods excellent; rear clean.

Neph. King, 738 Virginia avenue. Inspected August 27, 1906. Goods and floor clean; refrigerator clean.

J. H. Rothert, 649 Virginia avenue. Inspected August 27, 1906. Goods and floor clean; rear clean.

C. Douglas, 636 Virginia avenue. Inspected August 27, 1906. Goods and floor clean; rear satisfactory.

Hammond & Pasquier, 613 Virginia avenue. Inspected August 27, 1906. Goods, floor and refrigerator clean.

S. E. Woolensnider, 601 Virginia avenue. Inspected August 27, 1906. Floor, goods and refrigerator clean.

Mrs. N. Vinci, 310 Virginia avenue. Inspected August 27, 1906. Floor clean; goods fly specked.

J. H. Madden, 308 Virginia avenue. Inspected August 27, 1906. Floor, goods and refrigerator clean.

Peter Liehr, 433 N. Davidson street. Inspected August 28, 1906. Goods, floor and refrigerator clean.

J. C. Thomas, corner Noble and Michigan streets. Inspected August 28, 1906. Goods and floor clean; refrigerator satisfactory.

H. E. Schortemeier, 640 New York street. Inspected August 28, 1906. Goods and floor clean.

W. M. Kriel, 301 N. Noble street. Inspected August 28, 1906. Floor and goods clean; refrigerator clean.

R. Brattain, 770 W. New York street. Inspected August 28, 1906. Floor, goods and refrigerator clean.

H. G. Arszman, 443 W. Ohio street. Inspected August 28, 1906. Floor, goods and refrigerator clean.

#### FRANKLIN, IND.

F. N. LaGrange. Inspected August 30, 1906. Goods and floor clean; rear very clean.

H. C. Strickler & Son. Inspected August 30, 1906. Goods and floor in excellent condition.

L. H. Dunlap. Inspected August 30, 1906. Goods and floor clean.

J. A. Schmith. Inspected August 30, 1906. Goods clean; floor clean; bad odor from rear.

H. N. Dunlap. Inspected August 30, 1906. Goods and floor clean.

A. A. Whaley. Inspected August 30, 1906. Goods and floor clean.

J. R. Fleming. Inspected August 30, 1906. Goods and floor clean.

#### EDINBURG.

Chupp Bros. Inspected August 30, 1906. Floor and goods clean; excellent condition.

Maley & Hyde. Inspected August 30, 1906. Floor and goods clean; rear part clean.

F. Winterberg. Inspected August 30, 1906. Floor and goods clean; excellent condition.

C. A. Mutz. Inspected August 30, 1906. Floor and goods clean; rear clean.

G. M. Carvin. Inspected August 30, 1906. Floor and goods clean; rear of store satisfactory.

Wells Bros. Inspected August 30, 1906. Refrigerator clean.

#### COLUMBUS.

H. J. Tooley. Inspected August 31, 1906. Floor and goods clean.

J. B. Joy, 314 Third street. Inspected August 31, 1906. Floor and goods clean; meat rather dirty.

Weekley & Brown, 306 Third street. Inspected August 31, 1906. Floor and goods clean; rear satisfactory.

John Vorwald, 302 Third street. Inspected August 31, 1906. Floor and goods clean.

Knight & McLain, 240 Jackson street. Inspected August 31, 1906. Floor and goods clean.

Bethwitch & May, 231 Washington street. Inspected August 31, 1906. Goods and floor clean.

Jos. Newsom & Son, 414 Fourth street. Inspected August 31, 1906. Floor clean; goods dirty.

Frohman Bros., 434 Fourth street. Inspected August 31, 1906. Floor and goods clean.

H. L. Gaines, Postoffice block. Inspected August 31, 1906. Floor and goods in excellent condition.

Geo. Winans, 531 Washington street. Inspected August 31, 1906. Floor and goods clean; garbage in rear smells badly.

J. V. Hughes, 521 Washington street. Inspected August 31, 1906. Floors and goods in satisfactory condition; rear clean.

J. F. Lowe & Co., 426 Fifth street. Inspected August 31, 1906. Floor and goods clean.

A. Mathl, 1519 Seventeenth street. Inspected August 31, 1906. Goods and floor clean.

Von Amgis Grocery, corner Tenth and Sycamore streets. Inspected September 1, 1906. Floor and goods in good condition.

The Sycamore Grocery, 714 Sycamore street. Inspected September 1, 1906. Floor and goods satisfactory.

#### MUNCIE.

H. C. Adams, 515 S. Walnut street. Inspected September 5, 1906. Goods and floor satisfactory; rear very clean.

C. A. Cropper, 510 S. Walnut street. Inspected September 5, 1906. Everything in excellent condition.

Ed Goeble & Co., 416 S. Walnut street. Inspected September 5, 1906. Floor and goods clean; refrigerator clean.

H. W. Jones, 217 S. Walnut street. Inspected September 5, 1906. Floor and goods clean.

J. R. Guthrie, corner High and Main streets. Inspected September 5, 1906. Floor and goods clean.

Xenia Peterson, corner High and Washington streets. Inspected September 5, 1906. Floor and goods in good condition.

White & Haines, corner High and Washington streets. Inspected September 5, 1906. Floor and goods clean.

A. B. Phillips, 108 W. Washington street. Inspected September 5, 1906. Floor and goods clean.

W. W. Trullender, 118 N. Walnut street. Inspected September 5, 1906. Floor and goods clean; rear clean.

Sterling Cash Grocery, corner Jefferson and Main streets. Inspected September 5, 1906. Goods, floor and refrigerator clean.

Lake Carey, 305 E. Main street. Inspected September 5, 1906. Goods and floor clean.



T. Bryan & Son, 325 E. Main street. Inspected September 5, 1906. Floor and goods clean; rear rather dirty.

H. G. Mauzy & Co., 405 E. Main street. Inspected September 5, 1906. Floor and goods clean.

W. R. Wright, E. Main street. Inspected September 5, 1906. Goods, floor and rear clean.

Scott & Yingling, 121 E. Charles street. Inspected September 5, 1906. Floor and goods clean.

E. L. Addison, corner High and Jackson streets. Inspected September 5, 1906. Floor and goods clean.

E. S. Secrest, 117 W. Charles street. Inspected September 6, 1906. Floor and goods clean; rear satisfactory.

H. G. Krull, corner Kirby avenue and Monroe street. Inspected September 6, 1906. Floor, goods and rear clean.

Sam Moore, Kirby avenue. Inspected September 6, 1906. Floor and goods clean; meats fairly clean..

#### ANDERSON.

Norris, 1006 Main street. Inspected September 7, 1906. Floor and goods clean.

B. F. Timmons, 937 Main street. Inspected September 7, 1906. Floor and goods clean.

Geo. W. Hadley, 926 Main street. Inspected September 7, 1906. Floor clean; goods clean; refrigerator clean.

J. L. Phillips, North Side Square. Inspected September 7, 1906. Floor and goods clean; refrigerator clean.

Masters & Shackford, 22 W. Eighth street. Inspected September 7, 1906. Floor and goods clean; refrigerator excellent; ill smelling chicken coops in rear.

Madison & Son, 33 W. Eighth street. Inspected September 7, 1906. Floor, goods and refrigerator clean.

W. H. Wood, 1010 Meridian street. Inspected September 7, 1906. Floor and goods clean; rear very clean.

Geo. W. Hadley, 1017 Meridian street. Inspected September 7, 1906. Floor and goods clean; refrigerator satisfactory.

Masters & Shackelford, 1031 Meridian street. Inspected September 7, 1906. Floor and goods clean; refrigerator excellent.

Brown Pettit, 1109 Meridian street. Inspected September 7, 1906. Floor and goods clean.

Mike Graney. Inspected September 7, 1906. Floor, goods and refrigerator clean.

Yellow Front Grocery, 1210 Meridian street. Inspected September 7, 1906. Floor and goods clean; refrigerator rather dirty.

C. P. Durham, 1117 Main street. Inspected September 7, 1906. Floor and goods clean; refrigerator fairly clean.

Elliot & Son, 22 W. Fourteenth street. Inspected September 7, 1906. Floor and goods clean.

Fair View Grocery, 603 W. Fourteenth street. Inspected September 7, 1906. Floor and goods clean; ill smelling chicken coops.

## NOBLESVILLE.

Craig & Hayes, 13 S. Ninth street. Inspected September 11, 1906. Goods, floor and rear clean.

A. D. Couden, 15 S. Ninth street. Inspected September 11, 1906. Goods and floor in excellent condition; rear clean.

H. Deck, 33 S. Ninth street. Inspected September 11, 1906. Goods and floor clean; refrigerator clean.

Caylor's. Inspected September 11, 1906. Floor and goods clean; rear satisfactory.

L. W. Wild, Ninth street. Inspected September 11, 1906. Floor clean; cakes covered with syrup exposed to the flies.

Carlin & Moss. Inspected September 11, 1906. Floor and goods in excellent condition.

Caylor & Trissel. Inspected September 11, 1906. Floor and goods clean; refrigerator satisfactory.

Applegait & Barber, W. Logan street. Inspected September 11, 1906. Floor and goods clean; rear excellent.

## TIPTON.

Haynes & Shuck. Inspected September 11, 1906. Floor, goods and rear clean.

W. N. McGraw. Inspected September 11, 1906. Floor and goods clean; rear satisfactory.

Ramsey Bros. Inspected September 11, 1906. Floor, goods and rear clean.

Kirby & Winders. Inspected September 11, 1906. Floor, goods and rear clean.

Hash & Matherly. Inspected September 11, 1906. Floor and goods clean; rear satisfactory.

M. Bath. Inspected September 11, 1906. Floor and goods clean.

## ELWOOD.

Cavan's. Inspected September 12, 1906. Floor and goods clean; rear clean.

Star Grocery. Inspected September 12, 1906. Floor, goods and rear clean.

F. Aledndorf. Inspected September 12, 1906. Floor, goods and refrigerator clean.

Bicknell & Mahan. Inspected September 12, 1906. Floor, goods and refrigerator clean.

## ALEXANDRIA.

N. DePoy. Inspected September 12, 1906. Floor and goods clean; rear clean.

J. L. Grider. Inspected September 12, 1906. Floor, goods and rear clean.

## MARION.

G. B. Campbell, 321 Adams street. Inspected September 12, 1906. Floor and goods clean.

Swayzee's Market, 120-124 S. Washington street. Inspected September 12, 1906. Floor and goods clean; rear clean.

Boshorne & Marrone, 118 N. Third street. Inspected September 12, 1906. Floor and goods clean.

A. F. Norton, 205 N. Third street. Inspected September 12, 1906. Floor and goods clean; meats passable.

G. W. Day & Co., 219 N. Third street. Inspected September 12, 1906. Floor, goods and refrigerator clean.

Economy Market Co., corner Fifth and Washington streets. Inspected September 12, 1906. Floor and goods clean; meats excellent.

Hiatt & Lenferty. Inspected September 12, 1906. Floor and goods clean; rear excellent.

## KOKOMO.

J. P. Bireley & Co. Inspected September 14, 1906. Floor, goods and rear clean.

McKee & Rule, 28 E. Walnut street. Inspected September 14, 1906. Floor and goods clean; refrigerator clean.

Sulavan's Pure Food Stores. Inspected September 14, 1906. Floors, goods and refrigerator clean.

M. F. Hall, 1 N. Buckeye. Inspected September 14, 1906. Floor and goods clean; rear clean.

McKaffrey & Co. Inspected September 14, 1906. Floor, goods and rear clean.

William Bros. Inspected September 14, 1906. Floor and goods clean; refrigerator satisfactory.

Phillip Bernd. Inspected September 14, 1906. Floor and goods clean; rear passable.

## SOUTH BEND.

I. Miller. Inspected October 2, 1906. Floor clean; refrigerator in good condition, butter, milk and meat separate; store in excellent condition.

Joe Loos. Inspected October 2, 1906. Floor clean; other conditions good.

De Wall Grocery. Inspected October 2, 1906. Back end of store dirty; no odor in refrigerator.

Zoller-Mertz. Inspected October 2, 1906. General conditions good; refrigerator satisfactory; butter, milk and meats separate.

Barnett Bros. Inspected October 2, 1906. Sawdust on floor; refrigerator in good condition.

The Blake Grocery Co. Inspected October 2, 1906. Floor clean; goods and refrigerator in good condition.

J. M. Sartin. Inspected October 2, 1906. Floor and shelves dirty; store in a mussy condition.

Chas. W. Crofoot. Inspected October 2, 1906. Floor and shelves clean; goods clean.

Brodbeck Bros. Inspected October 2, 1906. Floor clean; refrigerator clean.

J. E. Williams Bros. Inspected October 2, 1906. Floor clean; shelves clean; store in good condition.

Brown Grocery. Inspected October 2, 1906. Floor dirty and mussy; no refrigerator.

J. A. McCollough. Inspected October 2, 1906. Floor dirty; shelves clean; rear room satisfactory.

Jos. Sommers, Meat Market. Inspected October 2, 1906. Floor dirty and greasy; refrigerator ill smelling.

Langs Grocery. Inspected October 2, 1906. Good condition; clean.

Kirks Market. Inspected October 2, 1906. Sawdust on floor; refrigerator clean.

A. L. Shropp. Inspected October 2, 1906. Floor slightly dirty, otherwise store in good shape.

F. W. Mueller. Inspected October 2, 1906. Floor, shelves, back room and refrigerator clean.

Chas. Wagner. Inspected October 2, 1906. Floor, shelves and rear room clean and in good condition.

Mueller-Johnson. Inspected October 2, 1906. Floor and refrigerator clean; rear room satisfactory.

Fred Rostister. Inspected October 2, 1906. Floor and shelves clean; refrigerator satisfactory, meat, butter and milk separate.

Hiram Bishop. Inspected October 2, 1906. Floor, shelves, rear room and refrigerator clean.

D. N. Becker. Inspected October 2, 1906. Floor dirty; shelves and refrigerator clean.

Bon Ton Grocery. Inspected October 2, 1906. Floor dirty; shelves and refrigerator clean.

Wesley Brown. Inspected October 2, 1906. Floor clean; refrigerator in good condition.

Raymon DeVoss. Inspected October 2, 1906. Floor dirty; shelves mussy; refrigerator satisfactory.

Edward Doane. Inspected October 2, 1906. Floor clean; back room and refrigerator clean.

A. Harper. Inspected October 2, 1906. Floor dirty; general conditions good.

Oliver Keene. Inspected October 2, 1906. Everything in good condition.

Post Grocery Co. Inspected October 2, 1906. Floor clean; refrigerator clean.

Scott & Brady. Inspected October 2, 1906. Floor dirty; shelves mussy.

W. Livengood. Inspected October 2, 1906. Floor clean; rear room and refrigerator clean.

Thomas Grocery Co. Inspected October 2, 1906. Front of store in good condition; rear room dirty.

**FT. WAYNE.**

**Ft. Wayne Grocery Co.** Inspected September 25, 1906. Front of store clean; rear very dirty; meat market at side of grocery, sawdust on floor in front; rear filthy and greasy; refrigerator ill smelling.

**Amos R. Walter.** Inspected September 25, 1906. Floor dirty; refrigerator dirty; butter, milk and meats separate; general conditions good.

**F. T. Mensch.** Inspected September 25, 1906. Store clean; floors and shelves clean; refrigerator satisfactory.

**G. H. Buck & Son.** Inspected September 25, 1906. Store in satisfactory condition.

**GOSHEN.**

**F. B. Hoffman.** Inspected September 27, 1906. Store clean; refrigerator satisfactory.

**M. A. Cornell.** Inspected September 27, 1906. Floor and shelves in good condition; rear room and cellar clean.

**W. W. Poyser.** Inspected September 27, 1906. Floor dirty; shelves clean; refrigerator in good condition.

**Chicago Fair.** Inspected September 27, 1906. Refrigerator clean and sweet; floors and shelves dirty.

**E. C. Murphy.** Inspected September 27, 1906. Store very mussy; back room filthy, trash all around.

**A. J. Bickel.** Inspected September 27, 1906. Everything in good condition.

**C. F. Bickel.** Inspected September 27, 1906. Floors, rear room and refrigerator clean.

**H. F. Philippl.** Inspected September 27, 1906. Store in good condition.

**Paul Bros.** Inspected September 27, 1906. Floor clean; general condition clean.

**Golden & Gemberling.** Inspected September 27, 1906. Floor clean; store in good condition; refrigerator clean.

**F. M. Swinehart.** Inspected September 27, 1906. Floor and refrigerator clean; rear room in good condition.

**Lilley & Sons.** Inspected September 27, 1906. Floor and back room clean.

**Robbins-Swinheart.** Inspected September 27, 1906. Floor dirty, otherwise in good condition.

**J. J. Hoffman.** Inspected September 27, 1906. Floor and shelves clean; refrigerator satisfactory.

**W. A. Griffin.** Inspected September 27, 1906. Floor dirty; shelves in good condition; rear room dirty; slight odor in refrigerator.

**Meyers Meat Market.** Inspected September 27, 1906. Both front and rear room clean; refrigerator sweet.

**Frank Ludwig.** Inspected September 27, 1906. Floor and refrigerator clean.

**Herman Bros.** Inspected September 27, 1906. Floor clean; refrigerator in good condition.

**Boyer Greiner.** Inspected September 27, 1906. Floor clean.

**Shick Bros., Meat Market.** Inspected September 27, 1906. Everything clean.

**C. A. DeLong.** Inspected September 27, 1906. Floor and refrigerator clean; rear room dirty.

**W. A. Paul Co.** Inspected September 27, 1906. Floor clean; general conditions good.

#### LAPORTE.

**Huscre Grocery Co.** Inspected October 4, 1906. Floor and stock dirty; shelves mussy.

**E. C. Hall & Bro.** Inspected October 4, 1906. Everything in good condition.

**Woolf Grocery Co.** Inspected October 4, 1906. Floor clean; general condition good.

**J. M. Strong.** Inspected October 4, 1906. Floor clean; no refrigerator; meat hanging on wall.

**C. F. Miller & Co.** Inspected October 4, 1906. Floor dirty; shelves clean; refrigerator satisfactory.

**J. A. Schumm.** Inspected October 4, 1906. Floor and rear room clean; refrigerator in good condition.

**Kleinfeld & Khann.** Inspected October 4, 1906. Floor and stock dirty.

**J. S. Minich.** Inspected October 4, 1906. Floor and shelves clean; refrigerator in good condition.

**Boyd W. Grandstaff.** Inspected October 4, 1906. Floor, shelves and ice box clean.

**Booserman Grocery.** Inspected October 4, 1906. Floor dirty, otherwise in good condition.

**Palm Bros., Meat Market.** Inspected October 4, 1906. Sawdust on floor; refrigerator sweet and clean.

#### MICHIGAN CITY.

**Chas. Romel.** Inspected October 5, 1906. Floor and stock clean; refrigerator in good condition.

**J. B. Van Pellen.** Inspected October 5, 1906. Floor dirty; goods and refrigerator clean.

**Henry Finckle.** Inspected October 5, 1906. Floor dirty; stock clean; refrigerator slightly ill smelling.

**Sam Hunziker.** Inspected October 5, 1906. Floor clean; shelves clean; refrigerator clean.

**G. M. Edwards.** Inspected October 5, 1906. Everything in good condition.

**Frank E. Gielow.** Inspected October 5, 1906. Floor and stock clean.

**A. H. Lohsand Grocery.** Inspected October 5, 1906. Floor and shelves clean; rear room satisfactory.

**Fred J. Krueger.** Inspected October 5, 1906. Floor and rear room dirty.

**L. B. Ashton.** Inspected October 5, 1906. Floor and stock clean; rear room in good condition.

Ray, Ebert & Co. Inspected October 5, 1906. Floor and stock clean; refrigerator in good condition.

Gildden Bros. Inspected October 5, 1906. Floor dirty; stock clean and in good condition; rear room and refrigerator clean.

M. E. Clark. Inspected October 5, 1906. Floor, stock and refrigerator clean.

G. Cruse & Co. Inspected October 5, 1906. Floor and goods clean.

L. W. Muse. Inspected October 5, 1906. Floor dirty; goods clean; rear room dirty.

Ernest Arch. Inspected October 5, 1906. Floor and goods clean; refrigerator satisfactory.

D. A. Keading. Inspected October 5, 1906. Floor dirty; stock and refrigerator in good condition.

#### WHITING.

Braidich Bros. Inspected October 8, 1906. Floor dirty; rear room, shelves and stock dirty.

Heyden Place Co. Inspected October 8, 1906. Floor and shelves clean.

M. A. Balla Grocery. Inspected October 8, 1906. Sawdust on floor; refrigerator satisfactory.

Jas. Allison. Inspected October 8, 1906. Floor clean; shelves clean; in good condition.

The Whiting Market Store. Inspected October 8, 1906. Floor and goods clean; refrigerator clean.

#### HAMMOND.

J. J. Austin. Inspected October 8, 1906. Floor and refrigerator clean.

H. T. Burk. Inspected October 8, 1906. Floor clean; stock clean; meat market in rear; refrigerator satisfactory; rear room clean.

Wm. A. Berriger. Inspected October 8, 1906. Floor and shelves clean; meat market in rear, sawdust on floor; refrigerator clean.

M. Maginot. Inspected October 8, 1906. Floor and stock clean; general conditions good.

M. Griswold. Inspected October 8, 1906. Floor and shelves clean; meat market in rear; refrigerator in good shape.

S. A. Southack. Inspected October 8, 1906. Floor clean; stock dirty; shelves mussy; refrigerator fair.

Mrs. Bertha Grimes. Inspected October 8, 1906. Floor clean; stock and refrigerator dirty.

H. W. Warwick & Co. Inspected October 8, 1906. Floor clean; stock clean; refrigerator dirty.

A. H. Bunde. Inspected October 8, 1906. Floor dirty; stock, rear room and refrigerator clean.

F. R. Nason. Inspected October 8, 1906. Floor and refrigerator clean.

M. M. Koch. Inspected October 8, 1906. Floor, stock and rear room clean.

**Hursh & Warwich.** Inspected October 8, 1906. Floor dirty; stock and refrigerator clean; rear room mussy.

**Hammond Meat Market.** Inspected October 8, 1906. Floor, refrigerator and rear room clean.

#### VALPARAISO.

**C. E. Shield.** Inspected October 9, 1906. Floor dirty; stock clean.

**Wm. Gossill, Meat Market.** Inspected October 9, 1906. Sawdust on floor; refrigerator clean.

**W. C. Windle.** Inspected October 9, 1906. Floor, stock and refrigerator clean.

**J. W. Selb, Meats.** Inspected October 9, 1906. Sawdust on floor; refrigerator clean; rear room dirty.

**Leety & Sons.** Inspected October 9, 1906. Floor clean; stock, refrigerator and rear room clean.

**F. Beyer.** Inspected October 9, 1906. Floor and stock in good shape.

**Herrick & Herrick.** Inspected October 9, 1906. Floor dirty; stock mussy.

#### PLYMOUTH.

**I. Miller.** Inspected October 10, 1906. Floor clean; rear room and stock rather dirty.

**Enterprise Grocery.** Inspected October 10, 1906. Floor, rear room and stock clean.

**W. A. Beldon.** Inspected October 10, 1906. Sawdust on floor; refrigerator and rear room clean.

**W. F. Sult.** Inspected October 10, 1906. Floor, stock and rear room clean.

**A. M. Reaves.** Inspected October 10, 1906. Floor clean; stock dirty; refrigerator and rear room dirty.

**Geo. Vinalls Grocery.** Inspected October 10, 1906. Floor, stock and rear room clean.

**L. J. Southworf.** Inspected October 10, 1906. Floor and stock clean.

#### ROCHESTER.

**Millic Grocery Co.** Inspected October 12, 1906. Floor, stock, rear room and refrigerator clean.

**W. H. Lowry Grocery.** Inspected October 12, 1906.

**Shore & Wilson.** Inspected October 12, 1906. Floor, stock, refrigerator and rear room clean.

**L. E. Downey.** Inspected October 12, 1906. Floor clean; stock and refrigerator in good shape.

**H. Brothers.** Inspected October 12, 1906. Floor dirty; stock in fairly good shape; refrigerator clean.

**J. F. Kepler.** Inspected October 12, 1906. Floor and stock clean; rear room dirty.

**L. W. Davidson.** Inspected October 12, 1906. Floor and stock clean.

**F. A. Kilmer.** Inspected October 12, 1906. Floor dirty; stock clean; rear room clean.



## PERU.

Kelly & Allman. Inspected October 12, 1906. Floor, stock and refrigerator clean.

B. F. Welmer. Inspected October 12, 1906. Floor, stock, refrigerator and rear room clean.

Woods & Vaner. Inspected October 12, 1906. Floor, stock, refrigerator clean.

E. A. Schram. Inspected October 12, 1906. Floor and stock clean.

Peru Mercantile Co. Inspected October 12, 1906. Floor dirty; stock clean.

Glennon Wendt. Inspected October 12, 1906. Floor, stock and refrigerator clean; rear room dirty.

S. W. Smith. Inspected October 12, 1906. Floor, stock and rear room clean.

J. W. Miller. Inspected October 12, 1906. Floor dirty; stock mussy.

F. I. Derberts. Inspected October 12, 1906. Floor dirty; stock and refrigerator clean; rear room floor dirty.

W. T. Hanson. Inspected October 12, 1906. Floor, stock and refrigerator clean.

John Devine Grocery. Inspected October 12, 1906. Floor clean; stock dirty; meat market in rear of store; refrigerator clean.

Petty-Drums. Inspected October 12, 1906. Floor, shelves, stock dirty; meat market in rear; dirt around the refrigerator.

J. D. Helderle. Inspected October 12, 1906. Floor clean; stock mussy; refrigerator fair.

W. Petty Grocery. Inspected October 12, 1906. Floor dirty; stock and refrigerator clean.

J. J. Glennon. Inspected October 12, 1906. Floor dirty; stock and rear room clean.

McCaffrey & Co. Inspected October 12, 1906. Floor clean; stock clean; meat market in rear.

## MADISON.

L. Danner. Inspected October 6, 1906. Grocery in good condition; back shop satisfactory.

Bilz & Kalb. Inspected October 6, 1906. Meat market satisfactory; refrigerator clean.

Spaulding & Thomas. Inspected October 6, 1906. Store and rear room in good condition.

Gus Yunker Meat Market. Inspected October 6, 1906. In very satisfactory condition.

J. F. Wells Grocery. Inspected October 6, 1906. Very satisfactory.

J. W. Temperly Grocery. Inspected October 6, 1906. In very good condition.

Chas. M. Short Grocery. Inspected October 6, 1906. Everything in good condition.

## JEFFERSONVILLE.

Best & Co., Grocery. Inspected October 6, 1906. In good condition.

M. J. Kenor, Grocery. Inspected October 6, 1906. Grocery satisfactory; meats screened off.

## NEW ALBANY.

R. L. Grosshelder, Grocery. Inspected October 6, 1906. In good condition.

W. O. Davis, Grocery and Meats. Inspected October 6, 1906. Store in good condition; refrigerator foul.

## DANVILLE.

H. V. Hunt Grocery. Inspected September 28, 1906. Stock clean; in good condition.

J. R. Brien. Inspected September 28, 1906. In excellent condition.

B. F. Howell & Son. Inspected September 28, 1906. Store in good condition.

H. H. Mills. Inspected September 28, 1906. Stock clean; refrigerator satisfactory; floor dirty.

J. M. Holman, Meat Market. Inspected September 28, 1906. Floor and refrigerator clean.

J. L. Darnell, Grocery. Inspected September 28, 1906. In good condition.

## GREENCASTLE.

Zeis & Co. Inspected September 27, 1906. Stock in good condition; general conditions poor; many flies.

Enterprise Department Store. Inspected September 27, 1906. Grocery department good.

Wm. Haspel, Meat Market. Inspected September 27, 1906. Very dirty; many flies; refrigerator dirty.

Egger & Cooper. Inspected September 27, 1906. Condition fair.

C. H. Meikel. Inspected September 27, 1906. Condition good.

J. C. Browning Grocery. Inspected September 27, 1906. Stock clean; meat department dirty.

R. S. Cooper. Inspected September 27, 1906. Floor dirty; general conditions good; refrigerator in excellent condition.

T. E. Evans. Inspected September 27, 1906. Store in good condition.

J. L. Peters Grocery. Inspected September 27, 1906. Grocery satisfactory; meat market in fair shape.

W. Craig. Inspected September 27, 1906. Everything in good condition.

T. A. Moran. Inspected September 27, 1906. Good condition.

E. C. Caldwell. Inspected September 27, 1906. Store and goods in fair condition.

C. H. Cook. Inspected September 27, 1906. Store in good shape.

W. H. Allen. Inspected September 27, 1906. Good condition.

## BRAZIL.

Hudson & Hudson. Inspected September 27, 1906. Shop clean; refrigerator clean.

G. H. Jones & Co. Inspected September 29, 1906. Everything in good condition.

Jones & Co. Inspected September 29, 1906. Conditions very good in store; refrigerator only fair.

G. H. Jones & Co. Inspected September 29, 1906. Store very clean; refrigerator fairly clean.

Hudson Bros., West Side. Inspected September 29, 1906. Store and refrigerator clean; rendering department only fair.

G. H. Jones & Co., 512 W. Main street. Inspected September 29, 1906. Store in excellent condition.

G. H. Jones & Co., 702 Main street. Inspected September 29, 1906. Store and refrigerator clean.

G. H. Jones & Co., 818 Main street. Inspected September 29, 1906. Store clean; refrigerator not very clean.

M. C. Stewart. Inspected September 29, 1906. Refrigerator good; racks rather dirty.

G. H. Jones & Co., Main street. Inspected September 29, 1906. Store and refrigerator very clean; racks rather dirty.

G. H. Jones & Co., 18 N. Meridian street. Inspected September 29, 1906. Store clean; refrigerator fair.

R. S. Stewart, 641 E. Main street. Inspected September 29, 1906. Store and refrigerator clean.

James Hunter Grocery. Inspected September 29, 1906. Store clean; stock good.

A. Comparon, 802 N. Vandalla. Inspected September 29, 1906. Store in fairly good condition.

Joseph Dascamps. Inspected September 29, 1906. In fair condition.

Mc. Rulle, 255 N. Ashley street. Inspected September 29, 1906. Refrigerator very dirty; stock good.

M. C. Murphy, 565 E. Main street. Inspected September 29, 1906. Very good condition.

Chevallier Bros., 557 Main street. Inspected October 1, 1906. Condition fair.

Monarch Grocery. Inspected October 1, 1906. Everything in good shape.

T. C. Cole, 515 E. Main street. Inspected October 1, 1906. Condition good.

E. N. Evans, 212 E. Main street. Inspected October 1, 1906. Store clean; stock satisfactory.

R. H. Bolln & Son, 217 E. Main street. Inspected October 1, 1906. Good.

I. S. Easter Meat Market. Inspected October 1, 1906. Refrigerator fair; meats and groceries good.

J. A. Krider. Inspected October 1, 1906. Good condition.

Collier & Thompson. Inspected October 1, 1906. Store and stock fairly good.

Kinzan Bros. Inspected October 1, 1906. Conditions fair.

S. T. Gonter & Co. Inspected October 1, 1906. Good.

J. A. Decker. Inspected October 1, 1906. Store fair; meat department dirty.

Geo. Ostwalt. Inspected October 1, 1906. Store and stock in satisfactory condition.

Gibbons Bros. Inspected October 1, 1906. Good condition.  
 J. Bogle. Inspected October 1, 1906. Everything in very good shape.  
 A. W. Shafer. Inspected October 1, 1906. Good condition.

#### TERRE HAUTE.

J. W. Maud. Inspected October 2, 1906. Very dirty junk shop and grocery combined.

P. O. Sullivan. Inspected October 2, 1906. Very dirty store.

Bauemeister Grocery. Inspected October 2, 1906. Fair condition.

Frank Smirtz, 113 Wabash avenue. Inspected October 2, 1906. Fairly clean; refrigerator new but dirty.

W. H. Fink, 112 Wabash avenue. Inspected October 2, 1906. Conditions good.

J. W. Hoff, 120 Wabash avenue. Inspected October 2, 1906. Very dirty shop; air foul; two dogs in shop.

H. C. Trowbridge, 119 Wabash avenue. Inspected October 2, 1906. Shop clean.

G. P. Willis, 128 Wabash avenue. Inspected October 2, 1906. Nice clean shop; racks in refrigerator dirty.

Jonas Strause, Wabash avenue. Inspected October 2, 1906. In fair condition.

E. A. Hollingsworth, Fourth and Cherry. Inspected October 2, 1906. Both grocery and meat market clean.

Wm. Fuhr, 212 S. Fourth street. Inspected October 2, 1906. In good condition.

C. W. Nagel, 210 S. Fourth street. Inspected October 2, 1906. Store in good condition; refrigerator clean.

B. S. Rockwood, 204 S. Fourth street. Inspected October 2, 1906. Everything clean and satisfactory.

J. W. Brown. Inspected October 2, 1906. Conditions fair; refrigerator clean.

W. H. Morris, Fifth and Ohio streets. Inspected October 2, 1906. Grocery and meat market clean; refrigerator clean.

A. R. Norris, 417 Ohio street. Inspected October 2, 1906. Refrigerator clean; in fair shape.

Wright & King Co., 647 Wabash avenue. Inspected October 2, 1906. Both meat market and grocery in excellent condition.

W. W. Kaufman, Seventh and Wabash avenue. Inspected October 2, 1906. Good condition.

F. A. Brown. Inspected October 2, 1906. Meat market in good condition.

J. B. Ryan, 802 Wabash avenue. Inspected October 2, 1906. Not much of a store.

S. Bressette, Eleventh and Wabash avenue. Inspected October 2, 1906. Grocery and meat market satisfactory; refrigerator fairly clean.

Tine & Voight, 1141 Wabash avenue. Inspected October 2, 1906. Meat market fair; grocery in good condition; refrigerator dirty.

Geo. Burgets, 1209 Wabash avenue. Inspected October 2, 1906. Very clean; refrigerator excellent.

F. W. Hoff, 1300 Wabash avenue. Inspected October 2, 1906. In good condition.

Thos. G. Lowe, 1353 Wabash avenue. Inspected October 2, 1906. Store in fairly good shape.

E. R. Pence, 1367 Wabash avenue. Inspected October 2, 1906. Grocery and meat market both satisfactory.

C. H. Clifton, 1513 Wabash avenue. Inspected October 2, 1906. Good.

G. C. Baesler, 1404 Wabash avenue. Inspected October 2, 1906. Meat market very good.

O. C. Hancock, 1529 Wabash avenue. Inspected October 2, 1906. Good condition.

W. R. Scott, 530 S. Second street. Inspected October 2, 1906. Store clean; refrigerator dirty.

Nat Kemper, 530 S. Third. Inspected October 2, 1906. Good condition.

John C. Vendall, 1101 S. Eighth street. Inspected October 2, 1906. Store clean.

J. T. McCullough, Ninth and College avenue. Inspected October 2, 1906. Store very clean; refrigerator exceptionally clean.

H. H. Thomas, 1222 College avenue. Inspected October 2, 1906. Good condition.

Herndon Bros., College and Thirteenth. Inspected October 2, 1906. Store very clean.

Keplin & Kahane, 100 S. Thirteenth. Inspected October 2, 1906. Good condition.

B. Reemer, 465 S. Thirteenth. Inspected October 2, 1906. General conditions good.

L. T. Scott, 1328 Poplar street. Inspected October 2, 1906. Good.

Oedink Bros., 1326 Poplar street. Inspected October 2, 1906. Store satisfactory.

J. F. Liehr, 1200 Poplar street. Inspected October 2, 1906. Goods and store clean.

H. Valentine, 1123 Poplar. Inspected October 2, 1906. Meat market in good shape.

H. Valentine. Inspected October 2, 1906. Grocery stock and store clean and in good condition.

J. Van Duzer, 1101 Poplar. Inspected October 2, 1906. Conditions good.

H. Handick, 1004 Poplar. Inspected October 2, 1906. Conditions fair.

John Dammershausen, Fifteenth and Liberty. Inspected October 2, 1906. Store in fairly good condition.

Fred Schanefeld, Fifteenth and Liberty. Inspected October 2, 1906. Store and stock in very good condition.

O. Vokley, 1540 Liberty street. Inspected October 2, 1906. Everything satisfactory.

J. B. Galliger, 1801 Liberty street. Inspected October 2, 1906. Store and stock clean; good.

J. W. Fritz, Fourteenth and Locust. Inspected October 2, 1906. Meat market and grocery fair.

P. C. Noban, 835 N. Thirteenth street. Inspected October 2, 1906. Refrigerator clean; store fair.

Fritz C. Fry, Locust and Thirteenth. Inspected October 2, 1906. In fair condition.

C. S. Smith, 934 Locust. Inspected October 2, 1906. In fair condition.

Frank Byrne, 901 N. Eighth. Inspected October 2, 1906. Very good.

G. W. Hess, 321 N. Ninth. Inspected October 2, 1906. In good condition.

A. Ray & Co., 605 Tippecanoe street. Inspected October 2, 1906. Everything satisfactory.

Andy Rowe, 827 Sixth street. Inspected October 2, 1906. Store in fairly good condition.

J. W. Rood, 614 Locust street. Inspected October 2, 1906. Store and stock in fair shape.

J. H. Helmick, 830 N. Sixth. Inspected October 2, 1906. Both grocery and meat market good.

H. S. Thomas, 402 Locust street. Inspected October 2, 1906. Very good condition.

J. Pendigast, 1033 N. Fourth street. Inspected October 2, 1906. Grocery and meat market fair.

J. P. Fagan, 400 N. Fourth street. Inspected October 2, 1906. This store is an excellent one.

John Formahlen, Fourth and Eighth avenue. Inspected October 2, 1906. In fairly good condition.

R. D. Plerson, 302 Hancock. Inspected October 2, 1906. Fairly good.

C. W. Ferguson, 2034 N. Third street. Inspected October 2, 1906. In good condition.

#### SLAUGHTER HOUSES.

Snyder's, Jeffersonville. Inspected October 6, 1906. Horrible condition of filth and stench; very old tumble-down buildings, impossible to clean; offal fed to hogs; slaughter house only, as carcasses are hauled away soon after killing; fat and tallow rendered in filthy kettle; entire surroundings could not be worse.

Wm. Haspel, Greencastle. Inspected September 26, 1906. This slaughter house is in a very dirty condition. The hides are salted down on the killing floor; the offal is thrown through a window to the ground where it is eaten by sickly looking hogs or left to decay. This pile is about a foot thick and ten feet in diameter. Flies go from the rotting refuse to the interior of the house, as no screens are in the building. They wash the house occasionally and at certain seasons of the year the stream which flows nearby overflows and floods the yard, house, etc., washing everything away. There are two other slaughter houses in Greencastle, both in fair condition, although not screened nor sanitarily kept.

F. H. Jones & Co., Brazil. Inspected September 29, 1906. This slaughter house is in very good condition; there are cement floors and the water supply is abundant for keeping the place clean.

Steward's Slaughter House, Brazil. Inspected September 29, 1906. This place is in a fair condition, although not screened. The temporary storage room was clean.

Terre Haute Abattoir & Stockyards Co. Inspected October 1, 1906. The surroundings of this place are very dirty and the platform where the meat is loaded on is unclean. The slaughtering rooms are in good condition, having a plentiful supply of water; there are no screens in the windows. The room where the fertilizer is made is in direct connection with both killing rooms. The manager promised to clean up and use screens, and the inspector recommended that the fertilizer room be separated by a partition from the rest of the plant. The cooling room was in excellent condition.

Valentine & Co., Terre Haute. Inspected October 1, 1906. This is a new slaughter house; conditions are good, although no screens are used and there are many flies. Manager promised to use screens; excellent cooling room.

Anderson Dressed Beef Co., Anderson. Inspected September 9, 1906. This slaughter house has rather good external appearance and consists of three rooms; the cooling room is fairly clean, although an odor is noticeable; the slaughtering room had considerable refuse on the floors; the rendering room is very filthy, the tanks being covered with grease and dirt, with refuse all around and the walls coated with dirt; a decided odor is noticeable in this room. The offal is fed to the hogs and they wallow in a pool of blood and water.

LABORATORY OF HYGIENE

REPORT

OF

Bacteriological and Pathological  
Division.

Year Ending October 31, 1906.

T. VICTOR KEENE, M. D.,  
*Superintendent.*

HELENE H. KNABE, M. D.,  
*Ass't Superintendent.*

ADA SWEITZER,  
*Assistant.*

(413)



## CHARACTER OF WORK AND AIMS

OF THE

# Bacteriological and Pathological Division

OF THE

## STATE LABORATORY OF HYGIENE.

---

The practical work of this laboratory is the examination of samples of sputum, the examination of diphtheria cultures, the examination of samples of blood and the examination of curettings and other pathological specimens, to aid physicians in making diagnoses, to the end that the people may be benefited. It is obvious that if diagnosis of disease is made more accurate and made earlier, that more cures can be made and more lives saved by the medical art. It not infrequently happens in regard to diphtheria that the physicians of a neighborhood differ as to the diagnosis, some contending for diphtheria and others for tonsilitis or other forms of angina. In such instances, the laboratory can make accurate decision, which is a great point in the isolation and quarantine of the disease for the purpose of its control. In consumption, the microscopical examination of the sputum is of great importance, for frequently patients will not accept the clinical diagnosis of physicians, and then they do not observe the health rules for disease prevention, and go on spreading the disease. And again, in such instances, the patient is lost, because he neglects to apply proper methods of cure, but goes on taking medicine in the hope of relief.

Blood examinations to diagnose typhoid fever are at this time a necessity. This is because at certain stages of these maladies it is impossible for the clinician to make absolute diagnosis. As it is with diphtheria, so it is with typhoid, the unrecognized and

mild cases spread the infection. As for the differentiation of typhoid and malaria, it is true that in not a few instances this can be done in the laboratory only. At the Indiana Soldiers' Home a year ago and at Richmond in the summer of 1906, it was discovered through the laboratory that epidemics of typhoid prevailed, most of the cases being mild, but competent to spread the disease in virulent form. This discovery was of much importance in staying the further spread of the disease.

Examinations made are herein tabulated and summarized. The tables show total number of examinations, and results by counties, and are followed by summaries.

## REPORT FROM THE DIVISION OF BACTERIOLOGY AND PATHOLOGY OF THE INDIANA STATE LABORATORY OF HYGIENE.

January.—A number of the specimens which appear in this month's report were examined during October, November and December, before the State Laboratory of Hygiene was formally established. Indeed, many of the physicians who had keenly felt the need of such an institution for a long time began to send specimens to the State Board of Health as soon as it became known that an appropriation had been made by the Legislature for this purpose.

### BACTERIOLOGICAL EXAMINATIONS

	<i>Positive.</i>	<i>Negative.</i>	<i>Total.</i>
Sputum (tuberculosis) .....	69	72	141
Diphtheria .....	23	18	41
Blood (typhoid).....	18	6	24

February.—We did not receive many specimens and were rather glad of it, because of the number of outfits for the collection of sputum, blood and diphtheria cultures which were to be sent to all parts of the State. These outfits are prepared and shipped by the employes of this laboratory. Letters have also been written to the health officers and the secretaries of the county medical societies, explaining the rules governing the work in this laboratory, and inviting the physicians to avail themselves of our services.

Of the 21 examinations for bacillus diphtheriæ, 13 were positive, and of these six specimens were received from Fort Wayne, three from Michigan City and three from Indianapolis, these specimens having been sent by one physician respectively from each city.

#### BACTERIOLOGICAL EXAMINATIONS.

	<i>Positive.</i>	<i>Negative.</i>	<i>Doubtful.</i>	<i>Total.</i>
Sputum (tuberculosis).....	29	66	..	95
Diphtheria .....	13	8	..	21
Blood (typhoid) .....	8	2	..	10

March.—We note with pleasure the increase of specimens sent for diagnosis, as this is only the third month since the formal opening of the Laboratory of Hygiene.

Diphtheria has not been much in evidence, only four of eight cultures giving a positive result. As might be expected, there is an increase in typhoid fever, because this disease is more prone to occur during the seasons where either heavy rains or the melting ice and snow increase the volume of surface water. As a consequence, many places which during the previous months had been polluted with excreta from persons suffering with typhoid fever, are now covered with water, which, receding, carries with it the dangerous bacteria, to distribute the disease in other places.

Of the 20 positive Widal reactions, six were found in blood, obtained from patients residing in Indianapolis, five others came from Michigan City. The examinations of sputum have increased considerably in number, Marion, Wayne and Clinton counties furnishing each a large percentage of the 142 examinations of this character.

#### BACTERIOLOGICAL EXAMINATIONS.

	<i>Positive.</i>	<i>Negative.</i>	<i>Doubtful.</i>	<i>Total.</i>
Sputum (tuberculosis).....	51	91	..	142
Diphtheria .....	4	4	..	8
Blood (typhoid).....	14	1	..	15

April—Typhoid fever is still on the increase. Greencastle, Putnam County, has quite an epidemic of this disease, 26 specimens from this town alone having been submitted for examination, all of them giving a positive Widal reaction. Laporte County, as represented by Michigan City, is in evidence with five positive

reactions. The remainder of the specimens are pretty evenly divided, with the exception of Marion and Vigo counties, which have three positive Widal tests each. The tuberculosis situation, judging from the specimens received this month, is bad indeed, nearly one-half of all cases showing the presence of bacillus tuberculosis.

#### BACTERIOLOGICAL EXAMINATIONS.

	<i>Positive.</i>	<i>Negative.</i>	<i>Doubtful.</i>	<i>Total.</i>
Sputum (tuberculosis).....	95	87	..	182
Diphtheria .....	4	2	..	6
Blood (typhoid).....	42	5	..	47

May.—Our records for this month show that we have made more examinations for tuberculosis than for any other disease. Nearly two-thirds of 168 samples of sputum contained tubercle bacilli. Thirteen positive Widal examinations came from nearly as many counties. The number of examinations to determine the presence of bacillus diphtheriæ was almost double that of last month.

#### BACTERIOLOGICAL EXAMINATIONS.

	<i>Positive.</i>	<i>Negative.</i>	<i>Doubtful.</i>	<i>Total.</i>
Sputum (tuberculosis).....	109	59	..	168
Diphtheria .....	5	6	..	11
Blood (typhoid).....	13	..	..	13

June.—There is very little to be said of this month. Laporte County furnished six cases of typhoid fever, although not all of them were from one town.

Of the 139 specimens examined for tuberculosis the majority gave a negative result. Diphtheria does not seem to prevail very extensively, as only ten cultures were submitted for examination during the month, and of these six did not contain diphtheria bacilli. This, with the exception of January, is the first month which shows more specimens with a negative result. We hope the cause of this is that the physicians avail themselves of the services of this laboratory in those cases which present but slightly suspicious symptoms, and if this supposition is correct it will mean that a long step toward the stamping out of this disease has been taken.

## BACTERIOLOGICAL EXAMINATIONS.

	<i>Positive.</i>	<i>Negative.</i>	<i>Total.</i>
Sputum (tuberculosis).....	47	92	139
Diphtheria .....	2	2	4
Blood (typhoid).....	11	5	16

July.—During the month of July, 1906, the examinations made in the Division of Bacteriology and Pathology of the Indiana State Laboratory of Hygiene were as follows:

## 1. EXAMINATIONS FOR BACILLUS TUBERCULOSIS.

	<i>Positive.</i>	<i>Negative.</i>	<i>Total.</i>
Sputum .....	74	115	189
Urine .....	2	5	7
Feces .....	0	3	3
Total .....	76	123	199

## 2. WIDAL TEST FOR TYPHOID FEVER.

	<i>Positive.</i>	<i>Negative.</i>	<i>Doubtful.</i>	<i>Total.</i>
Blood .....	34	8	1	43

## 3. EXAMINATIONS FOR BACILLUS DIPHTHERIÆ.

	<i>Positive.</i>	<i>Negative.</i>	<i>Total.</i>
Culture from throat.....	3	5	8

## 4. EXAMINATIONS OF BLOOD FOR PLASMODIUM MALARIÆ.

	<i>Positive.</i>	<i>Negative.</i>	<i>Total.</i>
Blood .....	2	11	13

## 5. BACTERIOLOGICAL EXAMINATION OF MILK.

Number of samples.....	3
------------------------	---

These three samples showed very high counts, due probably to the unsatisfactory way in which they were shipped.

## 6. MISCELLANEOUS SPECIMENS.

Pathological growths.....	16
Examination for tetanus (positive).....	1
Anthrax (horse).....	1
Suspected tapeworm (negative).....	1
Piece of beef for pus.....	1
Pus for gonococcus (negative).....	1
Total .....	21

## 7. SUPPLIES SHIPPED OUT.

Sputum outfits.....	149
Widal blood outfits for Widal tests.....	73
Diphtheria outfits.....	16
Malaria slides.....	2

We note that the number of positive Widal tests was four times greater than that of the cases in which the result was negative. Reports of the attending physicians show that many of these cases of typhoid ran a very mild course.

Of the 228 specimens of suspected tuberculosis, 60.9 per cent. were negative. The number of pathological specimens has been unusually large. Many of them were pieces of new growths, which upon examination, proved to be carcinoma.

Several of the miscellaneous specimens are worthy of note. In one instance, cerebral fluid from a horse was sent in. The owner of the animal suspected anthrax, having lost within a short time, four horses kept in the same stables. Microscopical examination, however, revealed the presence of a mixed infection of meningococci and other bacteria. Another was a case of tetanus, due to an explosion of a toy pistol. The spores of *B. Tetanti* were found in smears made from the wound immediately after death of the patient.

There have been 374 reports and letters sent out from this Department. The kind letters received from physicians of the State show an increasing appreciation of the assistance rendered them by the Laboratory of Hygiene, an appreciation which is very gratifying to those who have charge of the work.

August.—The month of August shows an increase in the number of blood examinations for typhoid fever, 65 per cent. of the specimens giving a positive Widal reaction.

Of the specimens examined for tuberculosis, 46.8 per cent. showed the presence of tubercle bacilli.

The head of one dog was received to be examined for rabies, and Nagri bodies were found in the brain. In connection with this disease, it seems necessary to call the attention of physicians to the fact that the head of the animal supposed to be rabid must be submitted, because scrapings from the wound caused by the animal are not satisfactory for such examinations.

There are still specimens coming in which are not prepared

according to the rules of this laboratory, and on account of the danger to the examiner, we can not examine them any more. The manner in which the accompanying blanks are filled out by the physicians is also very far from satisfactory. In some cases, even the physician's name is omitted, and reports on such cases can not, of course, be made.

There were 291 specimens examined in the laboratory from August 1st to September 1st.

#### 1. EXAMINATIONS FOR BACILLUS TUBERCULOSIS.

	<i>Positive.</i>	<i>Negative.</i>	<i>Total.</i>
Sputum .....	51	102	153
Specimens from wall of abscess cavity.....	1	..	1
Urine .....		6	6
Feces .....		2	2
Pus .....		1	1
<b>Total</b> .....	<b>52</b>	<b>111</b>	<b>163</b>

#### 2. EXAMINATIONS FOR BACILLUS DIPHTHERIÆ.

	<i>Positive.</i>	<i>Negative.</i>	<i>Total.</i>
Cultures from throat.....	4	2	6

#### 3. WIDAL TESTS FOR TYPHOID FEVER.

	<i>Positive.</i>	<i>Negative.</i>	<i>Doubtful.</i>	<i>Total.</i>
Blood .....	67	35	2	104

#### 4. EXAMINATIONS FOR PLASMODIUM MALARIÆ.

	<i>Positive.</i>	<i>Negative.</i>	<i>Doubtful.</i>	<i>Total.</i>
Blood .....	2	5	1	8

#### 5. SPECIMENS OF BLOOD FOR GENERAL EXAMINATION.

Pernicious anemia.....	1
Simple anemia.....	2
<b>Total</b> .....	<b>3</b>

#### 6. SUSPECTED HYDROPHOBIA.

Dog's head (positive).....	1
Tissue from arm (unsatisfactory).....	1
<b>Total</b> .....	<b>2</b>

## 7. MISCELLANEOUS SPECIMENS.

Pus examined for gonococcus (positive).....	2
Piece of steak for pus cavity.....	1
Pathological tissues—	
Sarcoma .....	1
Fibrous polyp.....	1
Filtrate from urine.....	1
Total .....	291

Letters received.....	62
Reports and letters sent out.....	354
Telegrams sent.....	6

## SUPPLIES SENT OUT.

Sputum outfits.....	209
Blood outfits for Widal tests.....	117
Serum cultures for diphtheria.....	38
Blood outfits for malaria.....	23

September.—During this month the number of Widal tests made in the laboratory was higher than in any of the preceding months. The reason for this is that in all parts of the State occurred many cases of intestinal diseases resembling typhoid fever. Those physicians who have availed themselves of the services of the laboratory for the past year are now aware of the fact that it is impossible to recognize a mild case of typhoid fever by the clinical symptoms only. Many of the cases which occurred during the past year were very mild or were attended by symptoms atypical in character. In nearly all cases, however, where there was a true typhoid infection, regardless of the clinical aspect of the case, the Widal reaction was present.

The results of our records now show that the majority of specimens received during this month came from patients suffering with acute intestinal disorders other than typhoid, and this demonstrates clearly that the laboratory fulfills the purpose for which it was created, viz., to assist the general practitioner in making a correct diagnosis of all doubtful cases where infectious diseases are suspected. The time saved in this way is very valuable to physicians, as well as patients, and especially in case of diphtheria the lapse of a few hours may seriously interfere with the chances of the patient's recovery.



Considering the number of specimens of sputum received for examination, we see that physicians are beginning to send more specimens from patients in whom no tuberculosis is present. This shows that any one of these cases will be given the proper treatment before the dread disease is established in the system, a fact which will be of the utmost importance in the economy of this State.

#### BACTERIOLOGICAL EXAMINATIONS.

	<i>Positive.</i>	<i>Negative.</i>	<i>Doubtful.</i>	<i>Total.</i>
Tuberculosis .....	68	104	..	172
Diphtheria .....	4	9	3	16
Typhoid fever.....	39	90	2	131

October.—The month of October has brought a heavy increase in the number of examinations of serum cultures to determine the presence of bacillus diphtheriæ. This disease seems to be disseminated pretty well throughout the State, as we have received cultures from many different counties. Out of 50 examinations of this kind, bacillus diphtheriæ was present in 30 cultures. Twelve cultures were found negative, i. e., micro-organisms other than diphtheria were the cause of inflammation of the upper air passages. The majority of these cases of true diphtheria occurred in children, although there was one case in an adult terminating fatally of which we received the culture after the death of the patient. In many of these cases the clinical symptoms were very slight, but the microscope revealed the fact that diphtheria bacilli were responsible for the trouble. We have no hesitation in saying that, had these mild cases been allowed to go on as simple sore throat or tonsillitis, there would have resulted an epidemic of diphtheria many times as severe as that, which the State Board of Health is combating at the present time.

In regard to the typhoid fever situation it is still grave enough, and we do not expect much abatement of this disease until the advent of winter.

#### BACTERIOLOGICAL EXAMINATIONS.

	<i>Positive.</i>	<i>Negative.</i>	<i>Doubtful.</i>	<i>Total.</i>
Sputum (tuberculosis).....	47	75	..	122
Diphtheria .....	30	12	8	50
Blood (typhoid).....	48	48	..	96

## SUMMARY.

As we look over the records at the close of the first year in the history of the Indiana State Laboratory of Hygiene, we note with appreciation the favorable aspect of conditions as we see them now. The early months of this work, before the formal opening of the laboratory, disclosed more clearly every day the dire need which existed in this State for just such an institution as the Laboratory of Hygiene. Nearly every specimen of sputum received at that time was teeming with tubercle bacilli. Practically all of these specimens came from people who had been under physicians' treatment for years. Slight colds, bronchitis and other diseases of the respiratory tract had followed each other closely in these patients, but as the price of a sputum examination was too high for most of them, no attempt was made in this direction; indeed, in many cases, the physician was compelled to donate his services during the years which elapsed from the appearance of symptoms of advanced tuberculosis until the death of the patient.

After the formal opening of the laboratory the question of getting in touch with the physicians of this State was the first to be solved. This was done through the newspapers, the Bulletin of the Indiana State Board of Health, and also by writing letters to the various medical societies. To address each physician as we would have liked to do was out of the question; also was it impossible to send one of the physicians employed in this laboratory to speak before the various medical societies and demonstrate the proper manner in which specimens should be sent. The physicians, however, soon began to make more use of the laboratory.

As the months passed by we noticed a remarkable change in connection with examinations for tuberculosis. Where, in the early part of the year one question on the record blanks, viz.: "How long have you been treating the patient?" was answered with—"Several years"—there appeared instead, "Two or three months." Now, at the end of one year, it is rare indeed to find it stated on any blank that the patient has been under treatment even as long as one month. The usual answer now received on this question is either, "Patient has just come under my observation" or "This is the second visit."

The great importance of this change becomes at once apparent when we consider the chronicity of tuberculosis. Whenever the

physician is enabled, at the time a patient comes to him, to have the sputum analyzed, he can at once take the proper measures to prevent this disease. Even in cases where tubercle bacilli are found the disease may be arrested.

A very notable instance of this character which we have had the good fortune to observe occurred during the past year. The sputum of Miss Mary Veach, residing at Mt. Summit, Ind., was sent for examination December 26, 1905, with the result that tubercle bacilli were present in small numbers. She was treated according to the rational method and specimens of her sputum were sent occasionally for examination. The bacilli persisted for about six months, then we did not hear from this patient for two months, and on August 3, 1906, another specimen was examined with negative result. This seemed so astonishing to the examining pathologist that inquiry was made to ascertain the probability of a mistake in sending the sputum. Since then, however, we have examined sputum from this patient repeatedly and are in position to record a case in which tuberculosis has been arrested in a resident of this State, merely by proper treatment, instituted at an early stage of the disease, without change of climate, as the patient never left her home.

**WIDAL EXAMINATIONS MADE WITH THE BLOOD OF SUSPECTED TYPHOID FEVER CASES.**

<i>Counties.</i>	<i>Positive.</i>	<i>Negative.</i>	<i>Doubtful.</i>	<i>Total.</i>
Adams .....	4	3	..	7
Allen .....	3	3	..	6
Bartholomew .....	5	1	..	6
Benton .....	1	..	..	1
Blackford .....	1	..	..	1
Boone .....	3	1	..	4
Carroll .....	4	..	..	4
Cass .....	5	2	..	7
Clark .....	1	..	..	1
Clay .....	2	..	..	2
Clinton .....	7	1	..	8
Dearborn .....	..	2	..	2
Decatur .....	2	2	..	4
Delaware .....	..	3	..	3
Elkhart .....	..	2	..	2
Fountain .....	4	1	..	5
Grant .....	6	5	..	11
Greene .....	1	1	..	2

## WIDAL EXAMINATIONS—Continued.

<i>Counties.</i>	<i>Positive.</i>	<i>Negative.</i>	<i>Doubtful.</i>	<i>Total.</i>
Hamilton .....	4	5	1	10
Hendricks .....	1	6	..	7
Hancock .....	1	1	1	3
Harrison .....	2	..	..	2
Henry .....	4	3	..	7
Howard .....	1	1	..	2
Jackson .....	3	1	..	4
Jefferson .....	10	10	..	20
Jennings .....	3	..	..	3
Johnson .....	3	3	..	6
Knox .....	..	1	..	1
Kosciusko .....	3	4	..	7
Lake .....	1	2	..	3
Laporte .....	24	5	..	29
Lawrence .....	1	..	..	1
Madison .....	7	1	..	8
Marion .....	69	53	..	122
Marshall .....	5	..	..	5
Montgomery .....	1	3	..	4
Newton .....	1	1	..	2
Noble .....	4	7	..	11
Owen .....	1	..	..	1
Porter .....	1	..	..	1
Posey .....	1	1	..	2
Putnam .....	26	4	..	30
Randolph .....	7	6	..	13
Ripley .....	..	2	..	2
Shelby .....	..	2	1	3
Spencer .....	6	2	..	8
St. Joseph .....	2	2	..	4
Switzerland .....	1	..	..	1
Tippecanoe .....	3	..	..	3
Tipton .....	1	4	..	5
Union .....	1	3	..	4
Vermillion .....	..	1	..	1
Vigo .....	13	2	..	15
Wayne .....	32	33	1	66
White .....	2	4	1	7
<b>Total .....</b>	<b>294</b>	<b>200</b>	<b>5</b>	<b>499</b>

## SPUTUM EXAMINATIONS.

<i>Counties.</i>	<i>Positive.</i>	<i>Negative.</i>	<i>Total.</i>
Adams .....	3	4	7
Allen .....	5	17	22
Bartholomew .....	16	14	30
Benton .....	7	2	9
Blackford .....	5	8	13
Boone .....	14	6	20
Carroll .....	4	4	8
Cass .....	2	6	8
Clark .....	6	6	12
Clay .....	9	5	14
Clinton .....	13	22	35
Crawford .....	10	5	15
Davless .....	10	6	16
Dearborn .....	..	1	1
Decatur .....	5	14	19
Dekalb .....	1	2	3
Delaware .....	8	5	13
Elkhart .....	11	14	25
Fayette .....	3	1	4
Fountain .....	15	20	35
Franklin .....	2	2	4
Fulton .....	1	3	4
Gibson .....	3	2	5
Grant .....	2	6	8
Greene .....	1	2	3
Hamilton .....	14	22	36
Hancock .....	7	6	13
Harrison .....	4	6	10
Hendricks .....	25	26	51
Henry .....	22	24	46
Howard .....	1	7	8
Huntington .....	2	7	9
Jackson .....	5	8	13
Jasper .....	2	4	6
Jay .....	2	2	4
Jefferson .....	10	15	25
Jennings .....	2	1	3
Johnson .....	4	3	7
Knox .....	10	12	22
Kosciusko .....	9	4	13
Lagrange .....	12	11	23
Lake .....	1	..	1
Laporte .....	8	24	32
Lawrence .....	..	2	2
Madison .....	14	19	33
Marion .....	92	152	244
Marshall .....	1	3	4

## SPUTUM EXAMINATIONS—Continued.

<i>Counties.</i>	<i>Positive.</i>	<i>Negative.</i>	<i>Total.</i>
Martin .....	2	3	5
Miami .....	8	8	16
Monroe .....	2	1	3
Montgomery .....	6	16	22
Morgan .....	2	2	4
Newton .....	..	2	2
Noble .....	3	8	11
Orange .....	1	..	1
Owen .....	1	3	4
Parke .....	3	10	13
Perry .....	1	5	6
Pike .....	..	2	2
Posey .....	13	14	27
Pulaski .....	7	9	16
Putnam .....	5	12	17
Randolph .....	21	32	53
Ripley .....	4	6	10
Rush .....	8	3	11
Scott .....	2	..	2
Shelby .....	4	10	14
Spencer .....	2	7	9
Starke .....	8	5	13
St. Joseph.....	1	2	3
Sullivan .....	10	15	25
Switzerland .....	2	..	2
Tippecanoe .....	8	11	19
Tipton .....	8	8	16
Union .....	2	7	9
Vanderburgh .....	1	1	2
Vermillion .....	12	16	28
Vigo .....	8	15	23
Wabash .....	9	14	23
Warren .....	4	3	7
Washington .....	1	1	2
Wayne .....	47	57	104
Wells .....	10	6	16
White .....	7	11	18
Whitley .....	4	3	7
Total .....	640	863	1,503

## DIPHTHERIA BY COUNTIES.

<i>Counties</i>	<i>Whole Number of Cultures Examined.</i>	<i>Positive.</i>	<i>Negative.</i>	<i>Doubtful.</i>
Allen .....	12	10	2	..
Bartholomew .....	1	..	..	1
Blackford .....	2	..	1	1
Carroll .....	2	..	1	1
Daviess .....	3	..	2	1
Decatur .....	2	..	2	..
Delaware .....	1	1	..	..
Elkhart .....	1	..	1	..
Fayette .....	1	1	..	..
Fountain .....	4	3	..	1
Franklin .....	1	1	..	..
Hamilton .....	4	4	..	..
Hancock .....	4	3	1	..
Harrison .....	1	1	..	..
Hendricks .....	3	1	2	..
Howard .....	1	1	..	..
Huntington .....	1	..	1	..
Jasper .....	4	2	2	..
Jefferson .....	10	3	6	1
Kosciusko .....	7	2	5	..
Laporte .....	7	3	4	..
Lawrence .....	9	5	3	1
Madison .....	9	6	2	1
Marshall .....	2	..	2	..
Marion .....	27	18	9	..
Montgomery .....	7	7	..	..
Newton .....	4	3	1	..
Noble .....	2	..	2	..
Posey .....	2	1	1	..
Putnam .....	1	1	..	..
Rush .....	3	..	3	..
Spencer .....	2	1	1	..
St. Joseph .....	1	..	1	..
Tippecanoe .....	2	1	1	..
Tipton .....	2	1	1	..
Union .....	1	..	1	..
Vermillion .....	4	2	..	2
Wabash .....	2	1	1	..
Wayne .....	10	4	6	..
Wells .....	4	3	1	..
White .....	5	2	2	1
<b>Total .....</b>	<b>171</b>	<b>92</b>	<b>68</b>	<b>11</b>

## SPUTUM EXAMINATIONS BY MONTHS.

<i>Months.</i>	<i>Positive.</i>	<i>Negative.</i>	<i>Total.</i>
January .....	69	72	141
February .....	29	66	95
March .....	51	91	142
April .....	95	87	182
May .....	109	59	168
June .....	47	92	139
July .....	74	115	189
August .....	51	102	153
September .....	68	104	172
October .....	47	75	122
Total .....	640	863	1,503

## WIDAL EXAMINATIONS, WITH BLOOD, BY MONTHS.

<i>Months.</i>	<i>Positive.</i>	<i>Negative.</i>	<i>Doubtful.</i>	<i>Total.</i>
January .....	18	6	..	24
February .....	8	2	..	10
March .....	14	1	..	15
April .....	42	5	..	47
May .....	13	..	..	13
June .....	11	5	..	16
July .....	34	8	1	43
August .....	67	35	2	104
September .....	39	90	2	131
October .....	48	48	..	96
Total .....	294	200	5	499

## DIPHTHERIA BY MONTHS.

<i>Months.</i>	<i>Positive.</i>	<i>Negative.</i>	<i>Doubtful.</i>	<i>Total.</i>
January .....	23	18	..	41
February .....	13	8	..	21
March .....	4	4	..	8
April .....	4	2	..	6
May .....	5	6	..	11
June .....	2	2	..	4
July .....	5	3	..	8
August .....	2	4	..	6
September .....	4	9	3	16
October .....	30	12	8	50
Total .....	92	68	11	171

As shown in the notes appended to the records of each month, several epidemics of typhoid fever and diphtheria occurred during the past year. Allen County has suffered most heavily from diph-



theria according to our records, as we find that ten out of twelve examinations of serum cultures showed the presence of diphtheria bacilli. Next to this comes Marion County, with eighteen positives out of twenty-seven examinations. We also received cultures from numerous other counties, but none of them gave as many positive results. Our records in Widal reactions show the largest number of positive results in Laporte County, where 25 of 29 cases were found to be typhoid fever. It is a notable fact that we have received specimens of this kind from physicians in Michigan City every month for the past year, and in a very small percentage only the result was negative. Wayne County is represented with 32 positive out of 66 examinations, and Jefferson County has 12 positive reactions from a total of 20 tests made. Marion County showed 69 positive reactions in 122 Widal tests; but it should be taken into consideration that this is only a small part of the Widal examinations made in this county, as the Indianapolis City Laboratory conducts the majority of these examinations in the above named city.

If the means to conduct a campaign of education among the citizens of Indiana are placed within the reach of the physicians connected with the Laboratory of Hygiene, the latter will be made the principal life-saving station of the State and results will not be long in forthcoming, as indeed they are showing now.

We are safe in saying that every physician who has availed himself of the services of the Indiana State Laboratory of Hygiene has materially benefited his community and incidentally every citizen in the State of Indiana.

**STATISTICAL REPORT**  
**FOR THE YEAR 1906.**

(431)



## REGISTRATION REPORT, 1906.

---

This report is for the calendar year 1906. The population figures are estimated from the census of 1900, according to the method of the United States Census Bureau.

In the following tables the causes of death are arranged according to the Bertillon classification, which has been adopted by all of the registration states of the country. This international classification was used by the United States Bureau of the Census in its last statistical compilation of causes of death.

Table 1 is a classification of all deaths with rates per 100,000 population, classified and arranged according to the international system.

Table 2 is a classification of deaths from all causes by months, ages, color, nationality and conjugal condition.

Table 2 A is a recapitulation of the classified deaths by months, ages, color, nationality and conjugal condition.

Table 3 gives death from all causes by counties, months, ages, color, nationality and conjugal condition.

Table 4 gives deaths from certain diseases by geographical sections and by counties.

Table 5 gives death rates from certain important causes, by counties in geographical sections.

Table 6, annual death rates for seven years, 1900 to 1907, with averages of cities of 5,000 population and over, compared with rural and state rates.

Table A gives births by counties, months, color and nationality of parents.

Table B gives births by counties, number of children born to each mother, grouped ages of parents, still births, plurality and illegitimate births.

Table C gives, by counties, the marriages by months, color and nationality.

Table D gives, by counties, the marriages by grouped ages.

### BIRTHS.

The number of births reported in the State of Indiana during the year 1906 was 45,300, of which number 23,469 were males and 21,831 females. Of the total males, 23,013 were white and 456 col-

ored. Of the total females, 21,418 were white and 413 colored. In the preceding year 44,114 births reported; males, 22,281; females, 21,333. October had the largest number of births, 4,263, and June the smallest, 3,255. September had the greatest number of deaths, 3,146, and June the lowest, 2,429. The births (45,300) rate 17.1, exceed the deaths (35,992); rate 13.5 per 1,000 population.

The nationality of parents shows as follows: American-born fathers, 40,166; American-born mothers, 40,919. Foreign-born fathers, 2,901; foreign-born mothers, 2,360; Nationality not reported, fathers, 1,798; mothers, 1,586.

Of the number of children born to each mother, 13,210 were first; 9,779, second; 7,059, third; 4,841, fourth; 3,333, fifth; 2,352, sixth; 1,627, seventh; 1,128, eighth; 685, ninth; 433, tenth; 254, eleventh; 306 were twelfth child and over, and 293 were not reported.

As to the ages of parents, 648 fathers and 4,795 mothers were under twenty years of age. In the age period of 50 to 60 there were 928 fathers and 23 mothers; age period 60 to 70, there were 111 fathers, and between 70 and 80 there were eleven fathers.

One thousand one hundred and three still births, also reported as deaths. The illegitimate births numbered 806, of which 429 were males, and 377 females. The plural births numbered 862, of which 455 were males, and 407 females. There were four sets of triplets in this number of pluralities.

#### MARRIAGES.

The total marriages reported, 26,225. This is an increase over the preceding year of 615. October had the greatest number of marriages, 2,762, and May had the smallest number, 1,675. The general statistics on marriages will be found in Tables C and D.

#### DEATHS.

The total number of deaths reported in 1906 was 35,992, with a rate of 13.58. In the preceding year 36,502 deaths, with a rate of 13.78. Males, 19,009; females, 16,983. White males, 18,247; colored, 762; white females, 16,317; colored, 666. American-born, 16,715 males, 15,402 females; foreign-born, 1,992 males, 1,446 females; nationality not reported, 302 males and 135 females. Single males, 9,220; females, 6,979; married males, 6,938; females, 5,781; widowed males, 2,525; females, 4,129; conjugal condition not reported, 326 males and 94 females.

The number of deaths, with rates for the years named, appear in the following table:

	1900.	1901.	1902.	1903.	1904.	1905.	1906
Deaths.....	35,516	36,544	34,069	33,892	37,240	36,502	35,992
Annual Rate.....	14.1	14.5	13.5	13.4	14.0	13.7	13.5

Of the total number of deaths, 8,004, or 22.2 per cent. of the whole number, occurred in the first year of life. This is almost one-fourth of the total.

Two thousand four hundred and sixty-two deaths occurred in the age period of 1 to 5, making the total loss of children under 5 years of age 10,466, or 29.0 per cent. of the total deaths. This is 23.1 per cent. of the total births reported. In the age period of 5 to 20, there were 2,585 deaths, or 7.1 per cent. of the total number. The total loss under 21 years of age is 13,051, or 36.2 per cent. of the total deaths. In the age period of 20 to 50, practically the prime of life, there were 7,942 deaths, or 22.0 per cent. of the total deaths. There were 360 deaths of persons over 90 years of age, a decrease of 25 from 1905.

The following table, giving deaths by months, shows March with the greatest number of deaths, with January, April, August and September having about the same. June had the lowest number of deaths, as was the case in 1905.

Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
3,110	2,924	3,331	3,142	2,765	2,429	2,845	3,136	3,146	3,101	3,049	3,024

March and April had the most tuberculosis deaths; March had most pneumonia; August and September were highest with diarrheal diseases, and October had the greatest number of typhoid deaths.

# PRINCIPAL CAUSES OF DEATH FOR LAST SEVEN YEARS, WITH AVERAGE.

The following table gives the principal causes of death in their numerical order, for the past seven years, and also the yearly average for each cause, and Chart No. 1 gives a graphic representation of the principal causes for 1906:

PRINCIPAL CAUSES OF DEATH IN INDIANA FOR THE LAST SEVEN YEARS WITH AVERAGE.

	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
1. Pulmonary tuberculosis.....	3,364	4,169	3,952	3,915	4,436	3,996	3,854	3,955
2. Pneumonia.....	2,744	3,384	2,758	2,634	3,487	3,124	2,890	3,003
3. Organic heart disease.....	1,750	1,754	1,800	2,108	2,180	2,182	2,208	2,007
4. Infantile diarrhoea.....	2,049	1,776	1,779	1,449	1,629	1,700	1,823	1,743
5. Accidents.....	1,334	1,463	1,391	1,601	1,622	1,795	1,796	1,571
6. Diseases of infants.....	1,361	1,247	1,183	1,318	1,736	1,906	1,766	1,501
7. Bright's disease.....	1,145	1,066	1,133	1,164	1,296	1,423	1,549	1,253
8. Cerebral congestion and hemorrhage.....	1,056	1,264	1,272	1,346	1,435	1,351	1,496	1,317
9. Cancer.....	1,046	1,113	1,209	1,217	1,250	1,424	1,417	1,240
10. Typhoid fever.....	1,440	1,198	1,217	1,013	1,013	928	913	1,103
11. Paralysis.....	1,100	986	762	762	935	901	777	890
12. Other circulatory diseases.....	470	574	648	596	665	637	768	622
13. Stomach diseases.....	676	704	641	613	561	678	699	653
14. Other forms of tuberculosis.....	1,281	493	440	477	542	494	602	630
15. Liver diseases.....	530	513	530	537	596	578	591	552
16. Broncho-pneumonia.....	228	480	417	466	672	535	576	482
17. Other digestive diseases.....	696	662	605	519	530	498	524	576
18. Cerebro-spinal meningitis.....	391	236	187	341	347	460	481	349
19. Bronchitis.....	522	562	484	523	571	540	460	523
20. Diarrhoea and enteritis.....	345	462	391	411	427	450	460	421
21. Diphtheria and croup.....	746	554	424	462	314	366	402	467
22. Suicides.....	196	254	278	254	283	338	321	276
23. Malformations.....	242	180	162	152	172	167	284	194
24. Other respiratory diseases.....	298	370	352	276	325	285	276	311
25. Rheumatism.....	256	184	209	220	266	253	274	237
26. Diabetes.....	111	204	197	197	226	231	269	205
27. Simple peritonitis.....	325	354	366	311	375	338	265	333
28. Convulsions of infants.....	381	406	339	335	345	306	254	338
29. Simple meningitis.....	447	553	509	365	538	352	240	439
30. Dysentery.....	323	263	277	211	194	218	235	244
31. Acute nephritis.....	223	142	150	191	207	189	230	190
32. Other genito-urinary diseases.....	274	243	390	437	229	194	228	285
33. Influenza.....	424	1,049	302	348	434	591	224	481
34. Ilac abscess.....	125	137	145	163	164	194	174	157
35. Skin diseases.....	261	124	181	129	140	179	170	169
36. Whooping cough.....	287	181	164	148	94	136	157	166
37. Diseases of female genital organs.....	107	85	87	85	91	88	112	93
38. Malaria.....	374	197	161	131	116	116	102	171
39. Scarlet fever.....	141	149	150	164	192	133	101	147
40. Homicides.....	27	48	36	62	48	85	93	57
41. Measles.....	85	161	67	73	212	6	23	89
42. Smallpox.....	19	21	75	195	97	35	8	64
Total.....	29,208	29,965	27,890	27,909	30,981	30,404	30,092	29,484

# PRINCIPAL CAUSES OF DEATH

## IN INDIA 1906

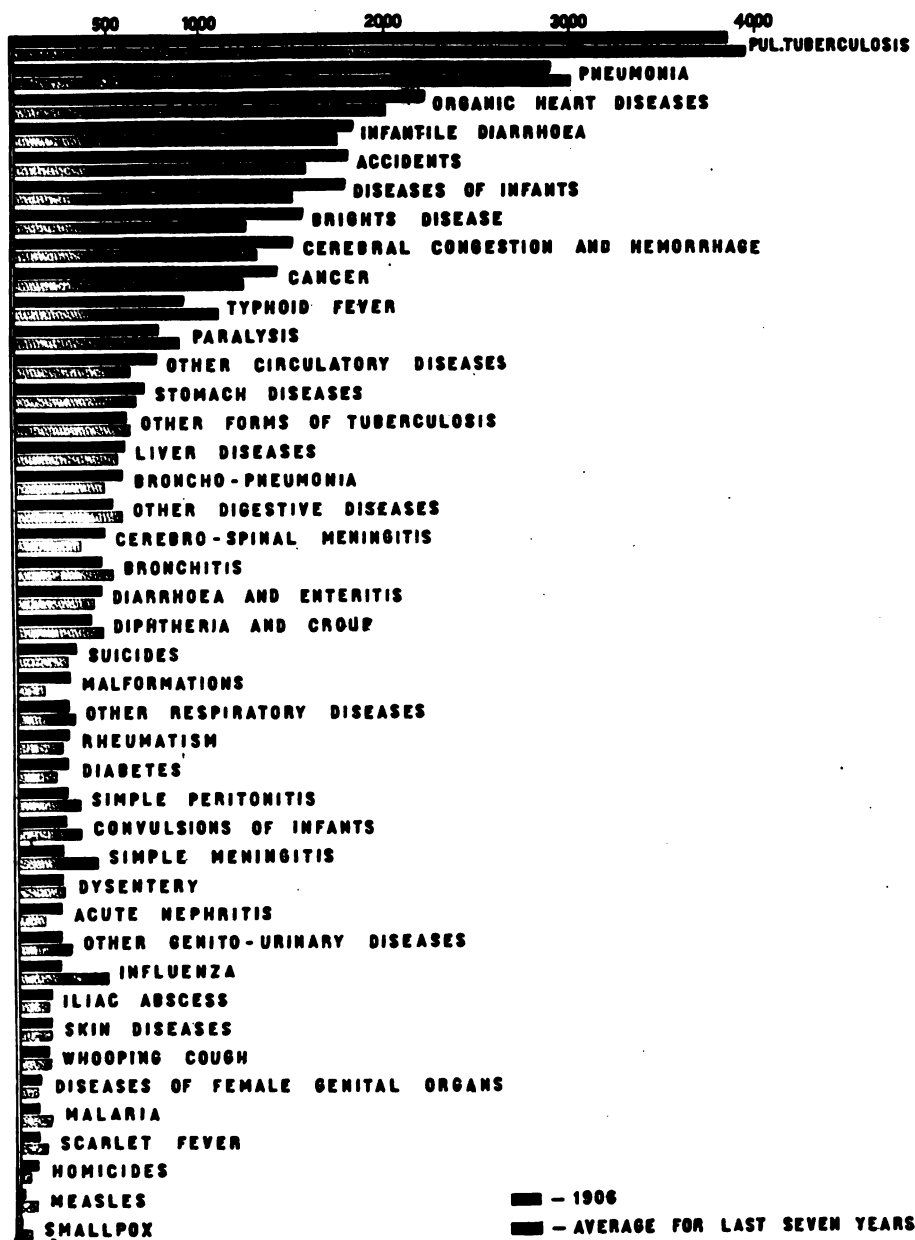


CHART No. 1.



## TUBERCULOSIS.

Tuberculosis still goes on its murderous way in Indiana, yet a slight decrease as compared with preceding years appears. All the following tables and diagrams show a slight decrease. Whenever possible the State Board of Health calls the attention of the people to the facts that tuberculosis is preventable, that it is curable if taken in its early stages, and that through private and governmental effort it can be greatly reduced.

## HAVOC WROUGHT [BY CONSUMPTION] IN INDIANA IN 1904-1905-1906.

	1904.	1905.	1906.
Total consumption deaths.....	4,978	4,492	4,456
Male deaths.....	1,807	1,745	1,675
Female deaths.....	3,171	2,793	2,771
Mothers, age 18 to 40, prime of life.....	887	987	917
Fathers, age 18 to 40, prime of life.....	490	815	255
Orphans made under 12 years of age.....	2,703	2,094	2,353
Homes invaded.....	3,396	3,307	3,283

Annual cost to the people, \$10,000,000.

## ALL FORMS TUBERCULOSIS

Deaths by months, with average for last seven years.

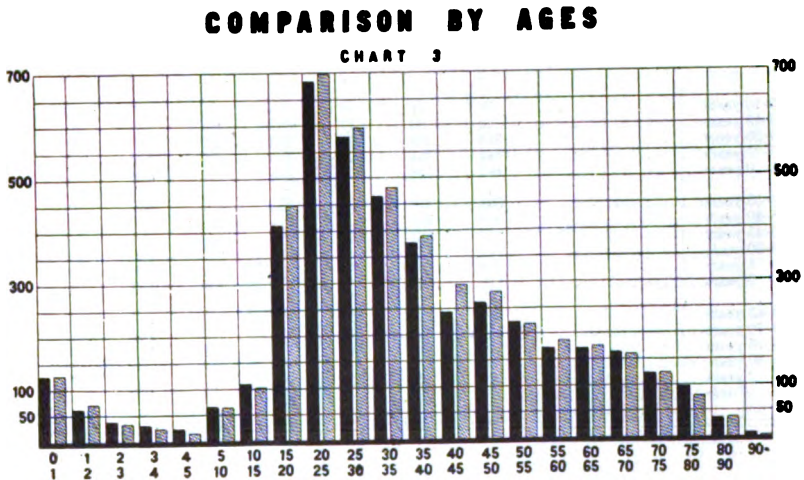
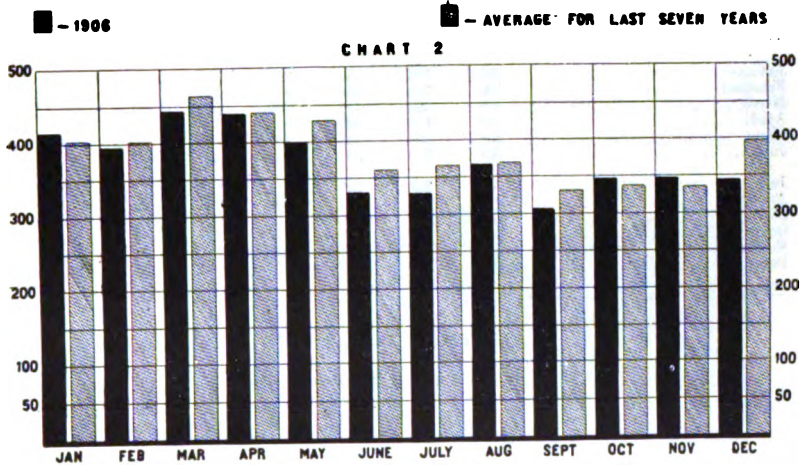
Months.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
January.....	417	399	402	368	420	419	415	404
February.....	422	440	389	350	414	407	394	402
March.....	454	433	459	445	550	461	443	463
April.....	455	449	444	411	459	426	439	440
May.....	405	420	405	383	502	391	398	429
June.....	394	348	323	363	400	361	331	360
July.....	382	394	320	373	397	361	329	366
August.....	392	403	331	340	390	355	367	368
September.....	343	309	353	354	347	306	307	331
October.....	366	350	305	306	365	326	344	337
November.....	316	357	320	333	352	326	346	335
December.....	399	370	345	388	582	353	343	397

## ALL FORMS TUBERCULOSIS.

Deaths by ages, with average for last seven years.

AGES.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
Under 1 year.....	155	135	113	109	144	108	126	127
1-2 years.....	74	62	68	59	99	85	62	72
2-3 years.....	42	34	31	24	42	26	38	34
3-4 years.....	23	23	17	23	25	18	31	23
4-5 years.....	12	17	12	14	13	11	24	14
5-10 years.....	69	63	51	64	68	63	64	63
10-15 years.....	90	99	98	92	126	97	106	101
15-20 years.....	532	417	401	436	501	449	411	449
20-25 years.....	690	718	672	707	725	697	681	698
25-30 years.....	627	595	598	572	614	574	577	594
30-35 years.....	457	519	464	491	509	464	464	481
35-40 years.....	388	386	346	374	436	419	375	389
40-45 years.....	346	310	311	267	316	273	242	295
45-50 years.....	269	248	235	225	286	245	260	281
50-55 years.....	218	185	224	217	232	222	221	217
55-60 years.....	209	190	181	193	206	153	171	186
60-65 years.....	185	200	153	166	189	165	170	175
65-70 years.....	159	171	155	143	152	165	162	158
70-75 years.....	124	118	124	116	136	122	122	123
75-80 years.....	78	81	76	74	75	72	96	79
80-90 years.....	36	42	38	30	47	34	35	37
90 and over.....		2	1	2	3		4	1

# DEATHS IN INDIANA TUBERCULOSIS ALL FORMS. COMPARISON BY MONTHS



## PULMONARY TUBERCULOSIS.

*Deaths by Months, with average for last seven years.*

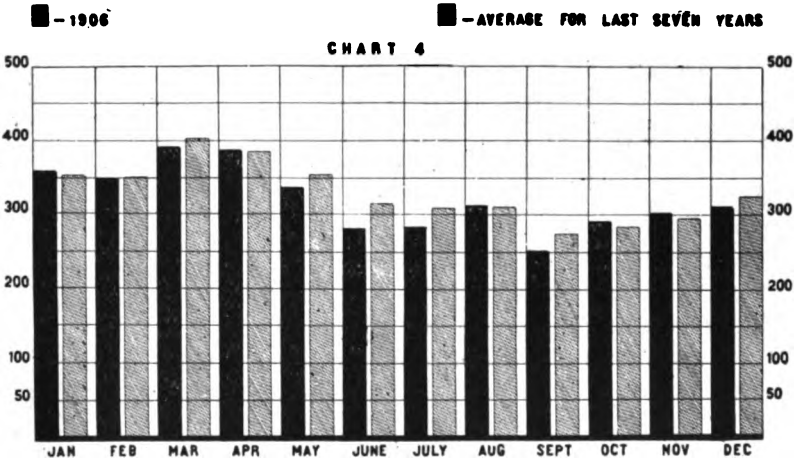
MONTHS.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average
January.....	300	368	358	324	379	305	350	354
February.....	300	300	353	318	373	379	349	351
March.....	318	388	416	309	485	421	391	402
April.....	339	408	409	365	409	390	396	395
May.....	266	378	368	339	448	346	337	354
June.....	301	310	297	326	359	330	283	315
July.....	244	349	295	323	358	310	294	309
August.....	271	254	300	293	332	308	313	310
September.....	212	266	296	318	302	263	253	273
October.....	274	302	266	261	322	266	289	283
November.....	248	321	288	297	317	287	302	294
December.....	291	335	306	352	353	313	310	323

## PULMONARY TUBERCULOSIS.

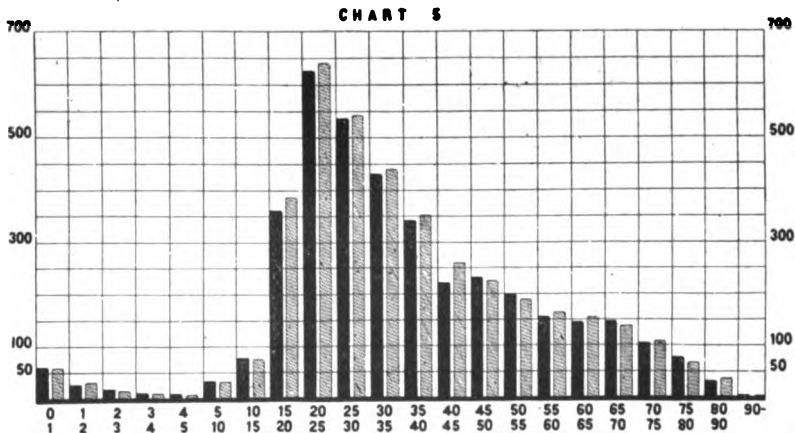
*Deaths by ages, with average for last seven years.*

AGES.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
Under 1 year.....	43	76	59	53	72	53	60	59
1-2 years.....	13	35	33	28	43	37	27	31
3-4 years.....	9	14	16	11	23	13	19	15
5-6 years.....	3	12	7	10	14	10	10	9
7-8 years.....	3	7	6	7	9	3	8	6
9-10 years.....	31	28	28	35	32	37	31	31
11-12 years.....	69	84	75	59	101	75	76	75
13-14 years.....	318	399	373	393	457	411	359	385
15-20 years.....	543	676	626	666	687	650	625	639
21-30 years.....	491	559	553	535	582	538	535	541
31-35 years.....	338	490	435	461	496	437	429	439
36-40 years.....	299	356	329	343	412	385	342	351
41-45 years.....	252	287	299	244	271	254	220	261
46-50 years.....	199	223	225	213	262	219	231	224
51-55 years.....	158	174	196	194	209	200	198	189
56-60 years.....	155	166	166	175	186	139	155	163
61-65 years.....	131	182	140	151	175	151	145	153
66-70 years.....	113	148	137	123	137	154	147	137
71-75 years.....	92	105	112	107	121	111	103	107
76-80 years.....	50	72	70	67	65	66	76	66
81-90 years.....	29	37	36	25	39	28	31	36
91 and over.....	.....	2	1	1	3	.....	4	1

# DEATHS IN INDIANA PULMONARY TUBERCULOSIS COMPARISON BY MONTHS



## COMPARISON BY AGES



7 CONSUMPTION DEATH RATES PER 100,000 BY COUNTIES FOR 1906, IN INDIANA.

*State Rate, 168.2.*

COUNTIES.	Tuberculosis, all forms.	COUNTIES.	Tuberculosis, all forms.
Adams.....	160.1	Lawrence.....	213.4
Allen.....	164.3	Madison.....	112.9
Bartholomew.....	221.0	Marion.....	236.2
Benton.....	102.7	Marshall.....	93.6
Blackford.....	65.2	Martin.....	12.6
Boone.....	178.4	Miami.....	180.5
Brown.....	164.4	Monroe.....	189.5
Carroll.....	140.2	Montgomery.....	146.9
Cass.....	153.1	Morgan.....	202.9
Clark.....	166.3	Newton.....	72.0
Clay.....	125.6	Noble.....	84.6
Clinton.....	182.1	Ohio.....	296.2
Crawford.....	215.1	Orange.....	304.5
Daviess.....	203.8	Owen.....	138.1
Dearborn.....	162.1	Parke.....	145.2
Decatur.....	173.2	Perry.....	231.6
Delkath.....	121.79	Pike.....	253.9
Delaware.....	142.7	Porter.....	101.7
Dubois.....	161.7	Posey.....	185.3
Elkhart.....	145.5	Pulaski.....	105.6
Fayette.....	151.7	Putnam.....	144.2
Floyd.....	174.4	Randolph.....	145.4
Fountain.....	175.6	Ripley.....	139.2
Franklin.....	183.0	Rush.....	184.4
Fulton.....	180.4	Scott.....	282.4
Gibson.....	167.7	Shelby.....	159.7
Grant.....	140.6	Spencer.....	186.2
Greene.....	192.0	Starke.....	111.4
Hamilton.....	155.8	Steuben.....	115.9
Hancock.....	172.0	St. Joseph.....	160.4
Harrison.....	226.4	Sullivan.....	170.0
Hendricks.....	145.5	Switzerland.....	211.1
Henry.....	164.1	Tippecanoe.....	157.0
Howard.....	155.7	Tipton.....	153.8
Huntington.....	125.8	Union.....	103.6
Jackson.....	195.3	Vanderburgh.....	184.1
Jasper.....	77.1	Vermillion.....	93.1
Jay.....	163.3	Vigo.....	205.1
Jefferson.....	292.3	Wabash.....	111.5
Jennings.....	234.2	Warren.....	130.0
Johnson.....	248.9	Warrick.....	131.5
Knox.....	135.6	Washington.....	228.0
Kosciusko.....	133.0	Wayne.....	242.8
Lagrange.....	117.6	Wells.....	132.0
Lake.....	130.9	White.....	92.4
Laporte.....	152.6	Whitely.....	150.0

MONTHLY ANALYSIS OF TUBERCULOSIS DEATHS.

January—The total number of deaths from tuberculosis was 412; of these 355 were of the pulmonary form. Of the total number, 195 were males and 217 females. Of the males, 37 were fathers in the age period of 18 to 40 and left 77 orphans under 12 years of age. Of the females, 64 were mothers in the age period of 18 to 40 and left 130 orphans under 12 years of age. We credit consumption with the destruction of 101 fathers and mothers in the useful period

of life and the production of 207 orphans. How many of these poor children will find their way into the orphan asylums can not be told. The homes invaded by the disease were 330. Two hundred seven of the total consumption deaths were in the age period of 15 to 40, which is 52 per cent.

February—The total number of deaths from tuberculosis was 372, and of these 325 were of the pulmonary form. Of the total number, 196 were females and 176 males. Of the males, 30 were fathers in the age period of 18 to 40, and left 67 orphans under 12 years of age. Of the females, 77 were mothers in the age period of 18 to 40, and left 161 orphans under 12 years of age. Number of homes visited by the disease, 354. Total number of orphans produced, 168. Thirty-three of the deaths were under 15 years of age; 274 in the age period of 15 to 50, and the remainder were above 50.

March—The total number of deaths from tuberculosis was 406, and of these 343 were of the pulmonary form. Of the total number 195 were males and 211 females. Of the males 36 were fathers in the age period of 18 to 40, and left 77 orphans under 12 years of age. Of the females 87 were mothers in the age period of 18 to 40, and left 179 orphans under 12 years of age. The number of homes visited by the disease was 398. The total number of orphans produced was 256. There were 59 consumption deaths of persons over 60 years of age.

April—Total number of deaths from tuberculosis, all forms, was 411. Of these 359 were of the pulmonary form. Of the total number 191 were males and 220 females. Of the males 39 were fathers in the age period of 18 to 40 and left 80 orphans under 12 years of age. Of the females 83 were mothers in the same age period as above and left 167 orphans. The number of homes visited by the disease was 386. Total number of orphans produced, 247. Two hundred and ninety-five deaths were in the age period of 15 to 50, which is 17.7 per cent. of the total.

May—Total number of deaths from all forms, 376, 318 being pulmonary. Of the total number, 147 were males and 229 females. Of the males, 37 were fathers between the ages of 18 and 40, and left 77 orphans under 12 years of age. Of the females, 73 were mothers of the same age period as above, and left 149 orphans under 12 years of age. Number of homes invaded, 372. Total number of orphans created, 226. Number of widows created, 37; number of widowers, 73.

June—The total number of deaths from tuberculosis, all forms, was 317, 275 being pulmonary. Of the total number, 143 were males

and 174 females. Of the males, 27 were married and in the age period of 18 to 40, and left 57 orphans under 12 years of age. Of the females, 66 were married and in the same age period as above, and they left 133 orphans under 12 years of age. Total orphans created by the disease under 12 years of age, 190. The number of homes invaded was 287.

July—Total number of deaths, 319. Forty-five of these were other forms than pulmonary. Of the total number, 143 were males and 176 females. Of the males, 25 were married and were in the age period of 18 to 40, and they left 50 orphans under 12 years of age. Of the females, 57 were married and in the age period just named, and they left 116 orphans under 12 years of age. The total number of orphans made by this disease in one month was 166. The total number of homes invaded, 291.

August—Total number of deaths, 351, 297 pulmonary, 54 other forms. Of the total number, 106 were males and 195 females. Of the males, 22 were married and in the age period of 18 to 40, the prime of life, and they left 48 orphans under 12 years of age. Of the females, 75 were married in the same age period as above and left 157 orphans under 12 years of age. The total number of orphans was 205, and the homes invaded numbered 316. Two deaths occurred in the age period of 80 to 90.

September—Total number of deaths, 291—240 pulmonary, 51 other forms. Of the total number, 136 were males and 155 females. Of the males, 23 were married in the age period of 18 to 40 and left 46 orphans under 12 years of age. Of the females, 58 were married in the same age period as above and left 126 orphans under 12 years of age. Total number of orphans made by the disease this month, 172. Homes invaded, 251. Two deaths, both women, occurred at 80 years of age. Nineteen, 10 of whom were women, occurred in the age period of 70 to 80.

October—Total number of deaths 323, of which 267 were of the pulmonary form and 56 other forms. Of the total number, 134 were males and 189 females. Of the males, 29 were married in the age period of 18 to 40 and left 59 orphans under 12 years of age. Of the females, 66 were married in the same age period as above and left 139 orphans under 12. The total number of orphans made by the disease this month was 198. Homes invaded, 296. Thirteen tuberculosis deaths occurred of people over 70 years of age.

November—The total number of deaths was 323, of which 284 were of the pulmonary form, and 39 other forms. Of the total number, 129 were males and 184 females. Of the males, 28 were

married in the age period of 18 to 40 and left 58 orphans under 12 years of age. Of the females, 76 were married in the same age period as above, and left 156 orphans under 12 years. The total number of orphans made by the disease this month was 214; homes invaded, 299. As usual the greatest destruction was in the useful period of life, 15 to 50, wherein 228, or 70.5 per cent., of the total deaths occurred.

December—Total number of deaths, 329, of which 293 were of the pulmonary form. The male deaths were 165, females 164. Of the males, 31 were married, in the age period of 18 to 40, and left 69 orphans under 12 years of age. Of the females, 56 were married, in the same age period as above, and left 116 orphans under 12 years of age. Total number of orphans made by the disease this month, 185. Homes invaded, 291. By age periods the tuberculosis deaths were: Under 5 years, 19; 5 to 15, 10; 15 to 40, 173; 40 to 60, 77; 60 and over, 50.

#### PNEUMONIA.

A slight decrease appears for pneumonia, inasmuch as the number of deaths in 1906 was 3,392, and the average annually for the last seven years is 3,419. In large cities pneumonia leads as a cause of death, but it is second to consumption in Indiana. The tables by months and by age periods, with their accompanying graphic charts, show the pneumonia status in this state.



## PNEUMONIA.

*Deaths by months with average for last seven years.*

MONTHS.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
January.....	375	655	473	450	579	601	490	517
February.....	435	672	535	424	750	781	439	576
March.....	616	646	497	419	761	656	541	592
April.....	498	496	371	330	576	265	404	415
May.....	234	280	207	240	326	189	232	244
June.....	94	120	104	129	115	90	119	110
July.....	62	72	70	83	101	82	88	79
August.....	65	74	97	86	69	69	82	74
September.....	56	90	113	114	86	88	98	92
October.....	89	156	169	134	135	148	189	145
November.....	136	202	196	245	251	253	300	226
December.....	223	389	307	389	353	372	410	349
Totals.....	2,883	3,823	3,319	3,044	4,102	3,504	3,392	3,419

## PNEUMONIA.

*Deaths by ages, with average for last seven years.*

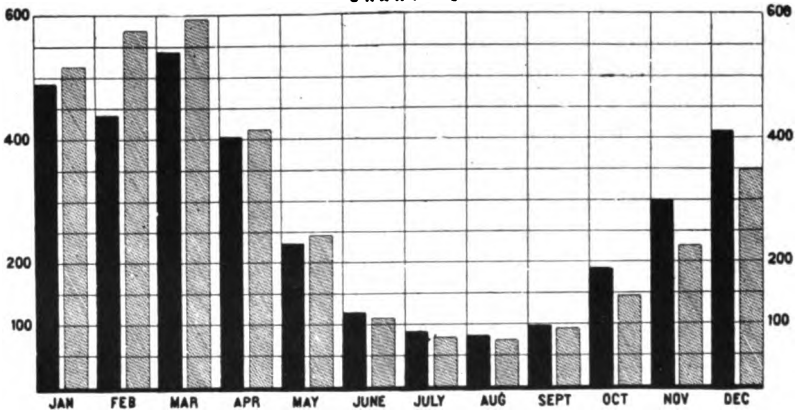
AGES.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
Under 1 year.....	542	758	602	703	919	898	714	746
1-2 years.....	206	248	246	216	326	251	262	250
2-3 years.....	113	123	113	107	145	97	127	118
3-4 years.....	53	73	47	57	87	63	67	64
4-5 years.....	40	46	39	34	53	28	46	41
5-10 years.....	82	120	93	102	145	90	91	103
10-15 years.....	64	66	55	57	72	71	50	62
15-20 years.....	85	139	93	88	128	89	95	102
20-25 years.....	95	130	107	83	108	83	77	97
25-30 years.....	92	119	86	72	98	79	89	90
30-35 years.....	91	115	96	58	104	90	86	91
35-40 years.....	104	121	80	78	114	107	104	101
40-45 years.....	89	142	104	77	105	98	106	103
45-50 years.....	107	110	87	103	137	106	112	109
50-55 years.....	116	159	118	89	137	130	130	125
55-60 years.....	107	179	112	132	136	140	137	120
60-65 years.....	181	218	142	164	195	173	155	175
65-70 years.....	162	244	205	172	225	237	216	208
70-75 years.....	163	246	192	202	261	270	229	223
75-80 years.....	162	191	200	192	268	226	232	210
80-90 years.....	195	216	181	204	271	237	232	219
90 and over.....		25	24	27	42	28	25	24

# INDIANA PNEUMONIA DEATHS COMPARISON BY MONTHS

■ - 1906

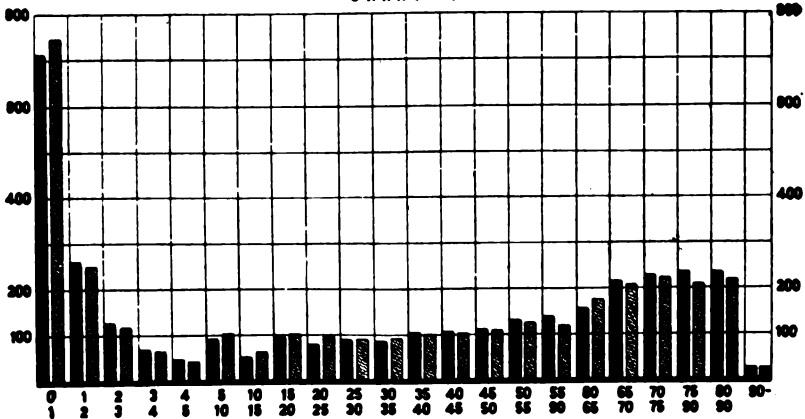
■ - AVERAGE FOR LAST SEVEN YEARS

CHART 6



## COMPARISON BY AGES

CHART 7



## MONTHLY ANALYSIS OF PNEUMONIA DEATHS.

January—Pneumonia caused 415 deaths, rate 184.8 per 100,000. In the corresponding month last year, 558 deaths, rate 248.6. This is a decided improvement, for which we should be grateful. One hundred forty-seven of the deaths were under 15 years of age, 92 between 20 and 50, 138 over 50, 3 were 90 and over.

February—Pneumonia caused 403 deaths; rate, 197.8. In the corresponding month last year, 741 deaths; rate, 362.2. In the preceding month, 415 deaths; rate, 184.8 per 100,000. There were 12 fewer in February than occurred in January. Of the total pneumonia deaths, 187 were males and 216 females. It is quite unusual for females to lead in this disease. Of the total number, 142 were under 15 years of age, 84 between 15 and 50, and the remainder were over 50. The right comparison is by the corresponding month last year, when there were 741 deaths, being a difference in favor of February of this year of 334.

March—Pneumonia caused 469 deaths; rate, 208.9 per 100,000. This is an increase over the preceding month of 66 deaths. In the corresponding month last year, 599 deaths. By this comparison, which is the right one, there is a decided improvement to be noted, as there is a difference of 130 deaths. Seventy-five of the deaths from pneumonia were under one year of age, 73 in the age period of 1 to 5, 70 between 5 and 30, 113 between 30 and 60, 54 in the age period of 60 to 70, 51 from 70 to 80, 44 from 80 to 90, and three over 90.

April—Pneumonia caused 386 deaths. In the corresponding month last year, 223 deaths, an increase of 163. Fifty-four pneumonia deaths were under 1 year of age, 75 between 15 and 50, and 132 over 50. Two men over 90 years of age died from the malady.

May—Pneumonia caused 213 deaths. In the corresponding month last year, 170. By this comparison, there is an increase of 43 deaths. Of the pneumonia deaths, 68 were under 5 years of age, 17 between 5 and 20, 32 between 40 and 60, 18 between 60 and 70, 32 from 70 to 80, and 16 were 80 and over.

June—Pneumonia caused 111 deaths. In the corresponding month last year, 91 deaths. Forty-seven pneumonia deaths were under 5 years of age; 9 were from 5 to 20; 7, 20 to 40; 12, 40 to 60; 27, 60 to 80; 9, 80 and over.

July—Pneumonia caused 85 deaths. In the preceding month, 111. In the corresponding month last year, 63. Of the pneumonia deaths, 25 were under 20 years; 12 in the age period of 20 to 50; 14 in the age period of 50 to 70, and the remainder 70 years and over.

**August**—Total number of deaths, 79. In the corresponding month last year, 61. Of the pneumonia deaths, 14 were under one year of age; 13 were 1 to 5; 23, 5 to 50; 17, 50 to 70; 11, 70 to 90, and one was over 90 years old.

**September**—Total number of deaths, 93. In the corresponding month last year, 85. Of the pneumonia deaths, 30 were under 1 year of age; 17, 1 to 10; 6, 10 to 20; 6, 20 to 40; 10, 40 to 60; 10, 60 to 70; 10, 70 to 80; 6, 80 and over.

**October**—The total number of deaths from pneumonia, 176. In the corresponding month last year, 138. Of the pneumonia deaths, 59 were under one year of age, 38 in the age period of 1 to 5; 11 in the age period of 60 to 70; 17 in the age period of 70 to 80; 4 were over 80, and 2 over 90 years.

**November**—The total number of deaths from pneumonia was 302. In the corresponding month last year, 219. Of the pneumonia deaths, 83 occurred in the first year of life, 39 from 1 to 5 years; 45 were in the age period of 70 to 80, and 26 in the age period of 80 to 90, and 2 were over 90.

**December**—The total number of deaths, 408. In the corresponding month last year, 347. Of the total deaths this month 210 were males and 188 females. By certain ages the deaths were: Under 1 year, 106; 1 to 10, 42; 10 to 30, 31; 30 to 50, 47; from 50 to 70, 69; 70 and over, 91.

#### **TYPHOID FEVER.**

The typhoid fever deaths in 1906 numbered 913, which is a slight decrease as compared with the annual average, 1,100, for the last seven years. As shown in the tables herewith, and by the graphic charts drawn therefrom, typhoid has gradually fallen since 1900. The four last months of the year show more deaths from typhoid than the eight preceding months.

## TYPHOID FEVER.

*Deaths by months, with average for last seven years.*

MONTHS.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average
January.....	100	74	66	61	36	51	39	62
February.....	52	50	37	53	55	35	29	44
March.....	40	49	41	55	62	34	40	46
April.....	30	41	45	45	61	26	32	41
May.....	44	35	31	39	55	33	39	39
June.....	27	27	28	42	58	48	29	37
July.....	65	81	88	64	70	57	52	68
August.....	144	148	176	120	107	121	96	130
September.....	245	198	237	193	138	203	155	195
October.....	323	222	225	165	167	154	168	203
November.....	208	185	155	104	137	101	148	145
December.....	144	88	88	72	67	65	86	87
Totals.....	1,440	1,198	1,217	1,013	1,013	928	913	1,100

## TYPHOID FEVER.

*Death by ages, with average for last seven years.*

AGES.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
Under 1 year.....	13	15	9	4	16	11	12	11
1-2 years.....	14	14	15	13	11	14	11	13
2-3 years.....	18	12	29	12	18	16	13	17
3-4 years.....	26	18	19	17	8	11	19	17
4-5 years.....	22	19	20	16	16	18	18	18
5-10 years.....	105	91	77	77	74	72	65	80
10-15 years.....	136	87	98	102	82	74	85	96
15-20 years.....	229	178	167	160	133	125	138	161
20-25 years.....	193	177	169	136	137	136	120	153
25-30 years.....	120	146	139	102	89	94	94	112
30-35 years.....	106	78	117	62	73	64	76	82
35-40 years.....	96	70	69	61	73	45	62	68
40-45 years.....	71	75	73	49	47	49	34	57
45-50 years.....	52	49	58	45	49	46	37	48
50-55 years.....	34	34	37	33	45	32	36	36
55-60 years.....	50	36	31	35	37	31	22	34
60-65 years.....	28	32	22	18	42	30	18	27
65-70 years.....	28	25	25	21	22	20	16	22
70-75 years.....	25	24	21	19	18	19	10	19
75-80 years.....	16	5	13	12	10	9	15	11
80-90 years.....	9	8	4	11	7	8	8	1
90 and over.....				1				

# INDIANA

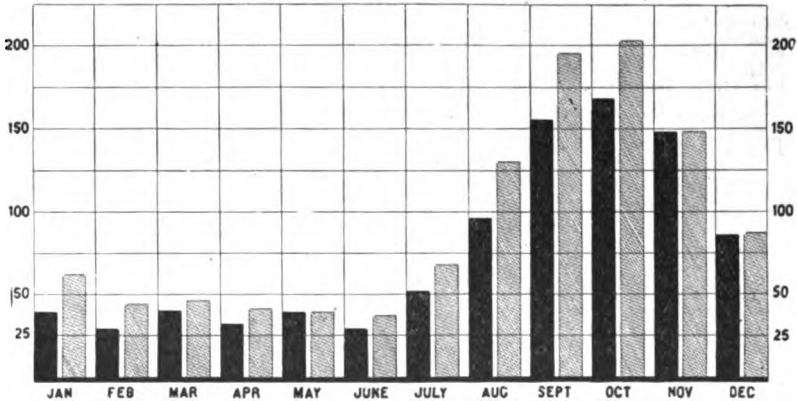
## TYPHOID FEVER DEATHS

### COMPARISON BY MONTHS

■ - 1906

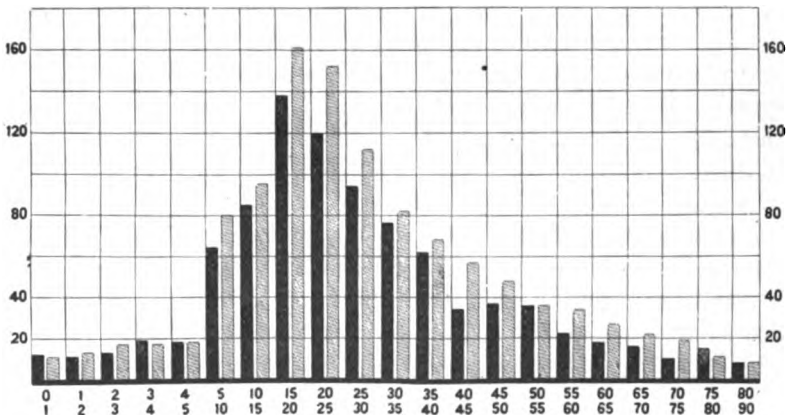
■ - AVERAGE FOR LAST SEVEN YEARS

CHART 9



### COMPARISON BY AGES

CHART 9



## MONTHLY ANALYSIS OF TYPHOID FEVER DEATHS.

January—Fifty-two counties report 175 cases of typhoid fever, with 33 deaths. In the corresponding month last year, 273 cases were reported with 50 deaths in 40 counties. In the preceding month there were 306 cases in 47 counties, with 66 deaths.

February—Thirty-eight counties reported 117 cases, with 29 deaths. In the corresponding month last year 42 counties reported 202 cases, with 32 deaths. In the preceding month 52 counties reported 175 cases, with 33 deaths.

March—Two hundred and fifty-eight cases were reported from 46 counties, with 37 deaths. In the corresponding month last year, 197 cases in 37 counties, with 30 deaths. In the preceding month, 117 cases in 38 counties, with 29 deaths.

April—Two hundred and eleven cases reported from 62 counties. The disease was epidemic in Daviess County, which reported 11 cases, with 1 death; in Jackson, with 6 cases and 1 death, and in Parke, with 8 cases and no deaths.

May—Ninety-four cases reported from 32 counties, with 40 deaths. The disease was epidemic in the following counties: Clark, 15 cases; Vanderburgh, 11; Washington, 15.

July—Two hundred and twenty-eight cases reported, with 44 deaths, from 49 counties. In the preceding month 94 cases, with 40 deaths, in 32 counties. The disease was epidemic in the following counties: Bartholomew, Clark, Howard, Jefferson, Morgan and Wayne. In Wayne County, at Richmond, many cases of sickness of an unusual nature appeared, some doctors calling the type of disease "summer grippe." Several physicians became suspicious and blood from these patients was sent to the Laboratory of Hygiene and was found to give the Widal reaction. It is estimated there were at least 200 cases of this mild typhoid fever in Richmond in July.

August—Four hundred and forty-six cases reported from 68 counties, with 93 deaths. In the corresponding month, 228 cases reported, with 48 deaths from 49 counties. In the corresponding month last year, 360 cases, with 125 deaths from 72 counties. The disease was epidemic in Adams County, 11 cases; Clay, 18; Daviess, 14; Delaware, 12; Madison, 12; Noble, 16; Vanderburgh, 35; Wayne, 50. We have every reason to believe that the disease, almost without question, existed in every county in the state either in mild or severe form.

September—Nine hundred and seventy-seven cases reported from 76 counties, with 143 deaths. In the preceding month, 446 cases in

68 counties, with 93 deaths. In the corresponding month last year, 1,080 cases in 96 counties, with 186 deaths. The disease was epidemic in the following counties: Bartholomew, 22; Clay, 20; Daviess, 30; Fayette, 20; Howard, 25; Lawrence, 33; Marion, 60; Montgomery, 17; Vanderburgh, 23; Vigo, 20; Wayne, 17; Washington, 15; Whitley, 25.

October—Seven hundred and thirty-two cases were reported from 73 counties, with 150 deaths. In the preceding month, 977 cases reported from 76 counties, with 143 deaths. In the corresponding month last year, there were 711 cases in 72 counties, with 152 deaths. The disease was epidemic in the following counties: Bartholomew, 11 cases; Delaware, 25; Howard, 15; Jefferson, 35; Madison, 25; Montgomery, 11; Noble, 17; Parke, 14; Posey, 27; Putnam, 12; White, 17.

November—Seven hundred and ninety cases of typhoid fever were reported in 73 counties, with 135 deaths. In the corresponding month last year, 570 cases from 62 counties, with 101 deaths. Several epidemics were reported. In Daviess County there were 16 cases and 2 deaths; Fayette, 10 cases and 2 deaths; Hancock, 16 cases, 1 death; Jackson, 10 cases, 2 deaths; Jay, 12 cases, 3 deaths; Lagrange, 15 cases, no deaths; Madison, 17 cases, 5 deaths; Noble, 10 cases, no deaths; Parke, 29 cases, 2 deaths; Putnam, 10 cases, no deaths; Vanderburgh, 12 cases, 1 death. We recognize from these reports that not a few cases of mild typhoid are diagnosed as malaria, diarrhoeal trouble, etc. We also recognize that many typical cases are not reported owing to thoughtlessness and disregard of the law on the part of practitioners.

December—Six hundred and seventy-four cases were reported from 50 counties, with 79 deaths. In the corresponding month last year, 712 cases from 47 counties, with 66 deaths. The disease was reported as epidemic in Clark County, 15 cases; Daviess, 17; Delaware, 24; Martin, 17; Noble, 17; Parke, 18; Spencer, 26; Union, 25; Washington, 20.

#### DIPHTHERIA.

Diphtheria caused 402 deaths in 1906, or 61 less than the average (463) for the last seven years. January is the most fatal month, and July the least fatal. The gradual decrease of deaths from diphtheria is largely due to the more general and earlier use of anti-toxin, although the teachings and warnings of the health department must have had some good effect.

The tables giving the number of deaths by months and by ages, follow herewith:



TABLE 1.

Summary of results, with average for all cases given.

Case	Age	Sex	Time	Time	Time	Time	Time	Time	Time
1	10	M	10	10	10	10	10	10	10
2	10	M	10	10	10	10	10	10	10
3	10	M	10	10	10	10	10	10	10
4	10	M	10	10	10	10	10	10	10
5	10	M	10	10	10	10	10	10	10
6	10	M	10	10	10	10	10	10	10
7	10	M	10	10	10	10	10	10	10
8	10	M	10	10	10	10	10	10	10
9	10	M	10	10	10	10	10	10	10
10	10	M	10	10	10	10	10	10	10

TABLE 2.

Summary of results, with average for all cases given.

Case	Age	Sex	Time	Time	Time	Time	Time	Time	Time
1	10	M	10	10	10	10	10	10	10
2	10	M	10	10	10	10	10	10	10
3	10	M	10	10	10	10	10	10	10
4	10	M	10	10	10	10	10	10	10
5	10	M	10	10	10	10	10	10	10
6	10	M	10	10	10	10	10	10	10
7	10	M	10	10	10	10	10	10	10
8	10	M	10	10	10	10	10	10	10
9	10	M	10	10	10	10	10	10	10
10	10	M	10	10	10	10	10	10	10

# INDIANA

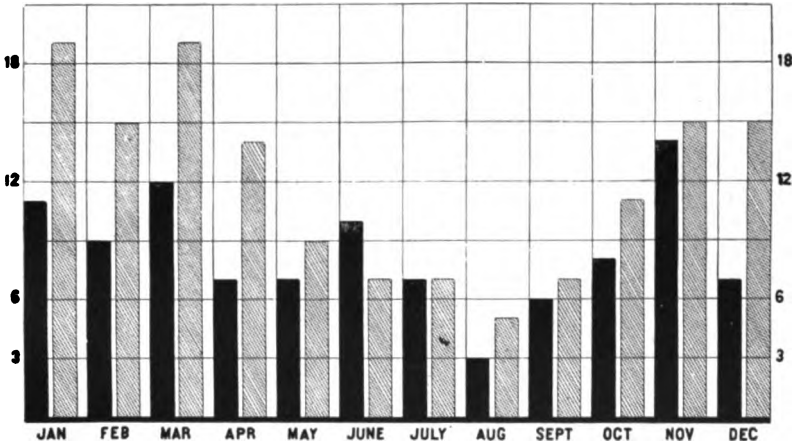
## SCARLET FEVER DEATHS

### COMPARISON BY MONTHS

■ - 1906

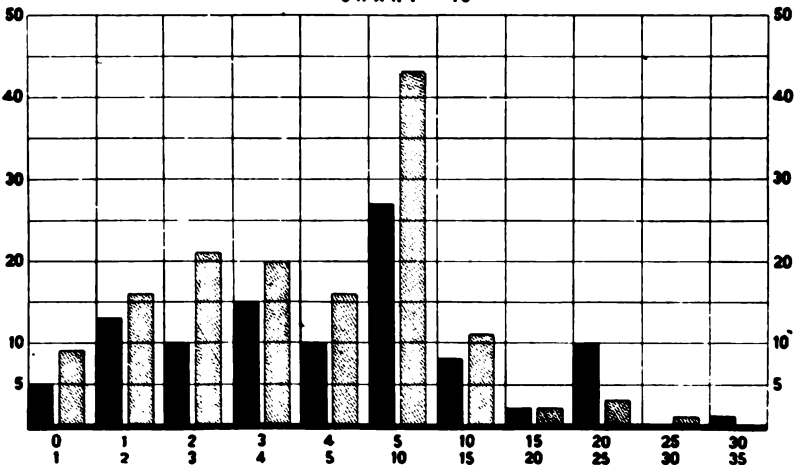
■ - AVERAGE FOR LAST SEVEN YEARS

CHART 12



### COMPARISON BY AGES

CHART 13



## DIARRHOEAL DISEASES.

The diarrhoeal deaths under five years of age numbered 1,823, which is 83 more than the average for the last seven years. That diarrhoeal diseases are fatal mostly in infancy and old age plainly appears in the table following.

The tables and charts show the status of the disease under the conditions and for the periods and ages stated:

## DIARRHOEAL DISEASES, UNDER FIVE YEARS OF AGE.

*Deaths by months, with average for last seven years.*

MONTHS.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
January.....	19	14	15	11	29	26	28	20
February.....	11	12	14	22	30	30	25	20
March.....	21	17	14	20	33	36	29	24
April.....	13	26	21	17	24	22	39	23
May.....	32	19	29	25	29	35	42	30
June.....	111	81	116	83	54	116	71	90
July.....	480	468	455	323	307	359	321	387
August.....	627	500	569	475	498	469	484	517
September.....	436	393	337	275	344	343	447	368
October.....	198	167	130	140	204	186	232	179
November.....	80	64	56	36	49	54	66	58
December.....	21	15	23	22	28	24	39	24
Totals.....	2,049	1,776	1,779	1,449	1,629	1,700	1,823	1,740

## DIARRHOEAL DISEASES, FIVE YEARS OF AGE AND OVER.

*Deaths by months, with average for last seven years.*

MONTHS.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
January.....	27	30	25	24	30	32	26	27
February.....	22	22	23	20	38	29	36	27
March.....	32	24	28	27	37	42	35	32
April.....	21	17	28	23	28	27	41	26
May.....	26	28	30	40	33	28	30	30
June.....	15	31	25	36	30	44	29	30
July.....	139	130	129	93	73	87	78	104
August.....	137	169	170	131	110	152	119	141
September.....	118	123	86	116	104	94	130	110
October.....	69	72	59	64	63	67	92	69
November.....	36	39	39	26	32	28	39	35
December.....	26	42	27	22	33	28	40	31
Totals.....	668	727	669	622	611	658	695	662

# DEATHS IN INDIANA

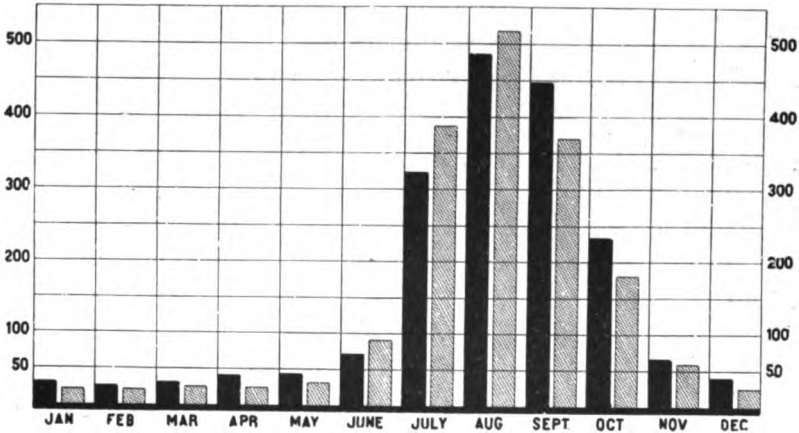
## DIARRHOEAL DISEASES

### COMPARISON BY MONTHS

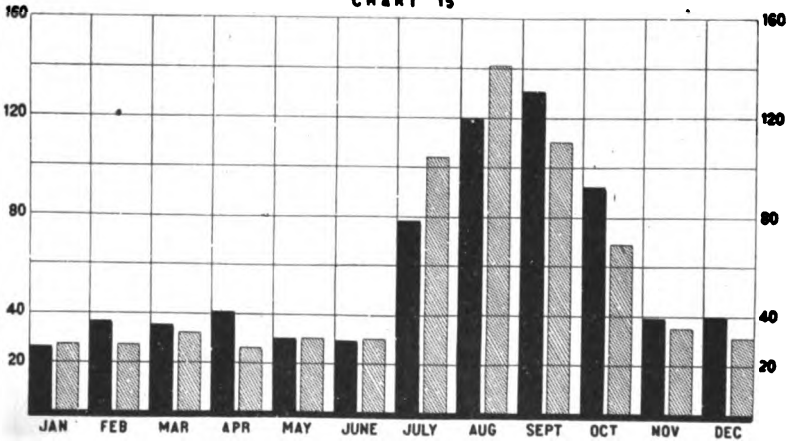
■ - 1906

▨ AVERAGE FOR LAST SEVEN YEARS

UNDER FIVE YEARS OF AGE  
CHART 14



FIVE YEARS AND OVER  
CHART 15



## DIARRHOEAL DISEASES

*Deaths by ages, with average for last seven years.*

AGES.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
Under 1 year.....	1,305	1,118	1,070	894	1,068	1,115	1,240	1,115
1-2 years.....	534	513	533	421	384	406	417	458
2-3 years.....	152	139	140	110	112	130	116	128
3-4 years.....	44	28	34	19	40	36	31	33
4-5 years.....	34	17	13	11	21	13	20	18
5-10 years.....	25	36	23	12	31	29	17	24
10-15 years.....	1	9	8	11	13	10	6	8
15-20 years.....	8	13	7	6	4	8	8	7
20-25 years.....	11	15	14	9	15	17	12	13
25-30 years.....	9	13	15	12	13	16	21	14
30-35 years.....	9	32	12	20	14	10	10	15
35-40 years.....	19	18	28	14	15	22	17	19
40-45 years.....	22	13	14	15	19	20	19	17
45-50 years.....	21	22	20	24	19	13	14	19
50-55 years.....	31	31	30	36	33	25	30	31
55-60 years.....	43	46	57	37	37	51	37	44
60-65 years.....	63	62	60	45	57	72	59	59
65-70 years.....	77	91	73	67	68	68	90	76
70-75 years.....	82	70	80	98	88	93	90	87
75-80 years.....	69	83	98	91	88	95	107	89
80-90 years.....	94	107	102	94	89	104	124	102
90 and over.....		22	11	14	12	13	18	13
Totals.....	2,653	2,498	2,442	2,060	2,240	2,366	2,512	2,389

# DEATHS IN INDIANA

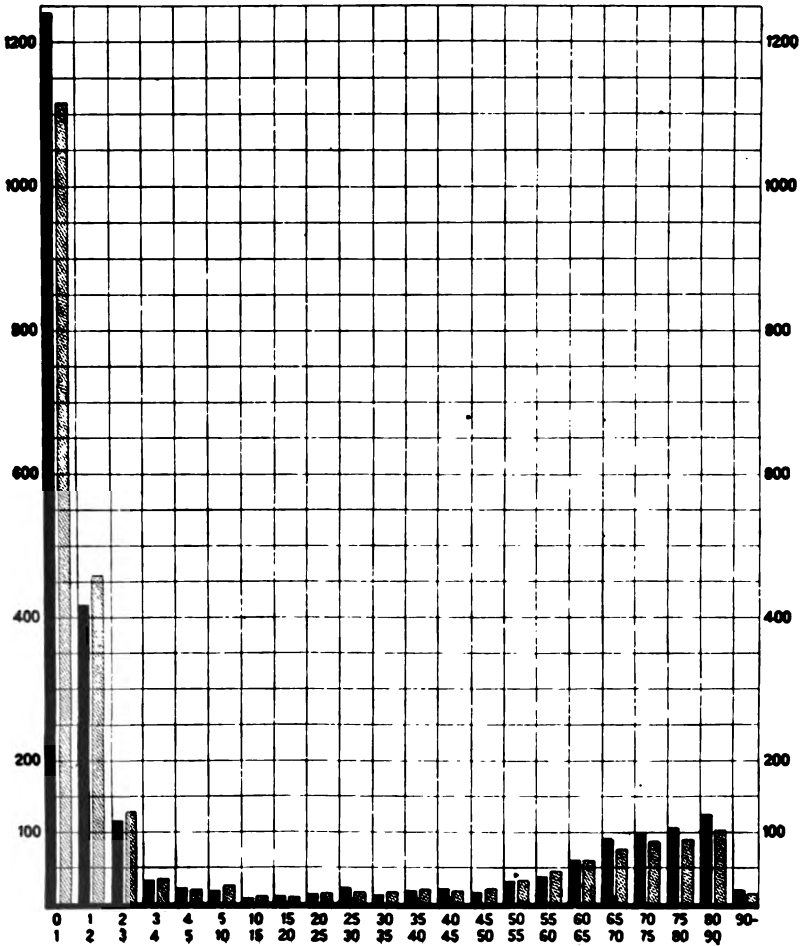
## DIARRHOEAL DISEASES

### COMPARISON BY AGES

■ - 1906

▨ - AVERAGE FOR LAST SEVEN YEARS

CHART 16



## INFLUENZA.

Influenza caused 224 deaths in 1906, which is a large decrease as compared with the average (477) for the last seven years. However, the disease existed, but not in epidemic form, in every county in the state, deaths occurring in 73 counties. The northern sanitary section was freer from the disease and had fewer deaths than either the central or southern section. The tables and charts herewith show the status of the disease:

## INFLUENZA.

*Deaths by months, with average for last seven years.*

MONTHS.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
January.....	53	269	60	31	45	114	53	89
February.....	70	349	84	51	90	221	44	129
March.....	98	180	51	87	146	151	48	108
April.....	101	128	37	60	70	37	30	66
May.....	34	42	15	37	20	15	7	24
June.....	19	12	4	10	7	7	2	8
July.....	12	9	8	7	2	5	4	6
August.....	4	10	3	9	5	.....	2	4
September.....	1	3	7	3	1	4	3	3
October.....	13	5	8	7	4	4	8	7
November.....	8	12	8	10	18	12	11	11
December.....	11	30	17	36	26	21	12	22
Totals.....	424	1,049	302	348	434	591	224	477

## INFLUENZA.

*Deaths by ages, with average for last seven years.*

AGES.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
Under 1 year.....	35	66	47	13	32	43	14	35
1-2 years.....	7	14	7	3	4	10	3	7
2-3 years.....	3	11	4	3	1	6	5	4
3-4 years.....	1	5	4	2	4	.....	.....	2
4-5 years.....	2	4	4	2	.....	1	2	2
5-10 years.....	7	11	9	2	3	5	2	5
10-15 years.....	2	6	4	6	7	4	3	4
15-20 years.....	3	12	3	3	6	7	4	5
20-25 years.....	5	20	4	4	3	16	3	8
25-30 years.....	13	22	2	5	8	3	.....	7
30-35 years.....	7	22	2	5	7	9	2	7
35-40 years.....	9	27	6	5	7	9	4	9
40-45 years.....	17	33	1	6	6	16	3	11
45-50 years.....	17	33	6	7	13	14	10	14
50-55 years.....	8	43	12	16	9	17	13	17
55-60 years.....	15	41	14	16	16	32	6	10
60-65 years.....	23	57	5	28	22	40	11	26
65-70 years.....	47	103	35	27	37	47	24	45
70-75 years.....	59	159	35	53	73	67	31	68
75-80 years.....	55	151	39	58	61	86	31	68
80-90 years.....	83	180	51	74	94	132	43	94
90 and over.....	.....	26	7	9	15	23	8	12

# INDIANA

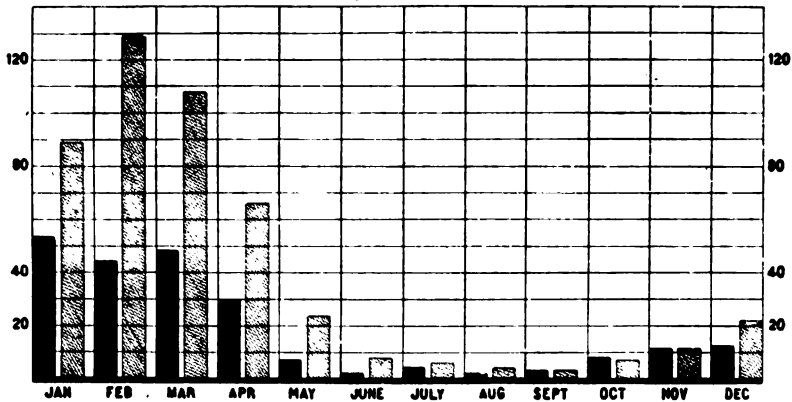
## INFLUENZA DEATHS

### COMPARISON BY MONTHS

■ - 1906

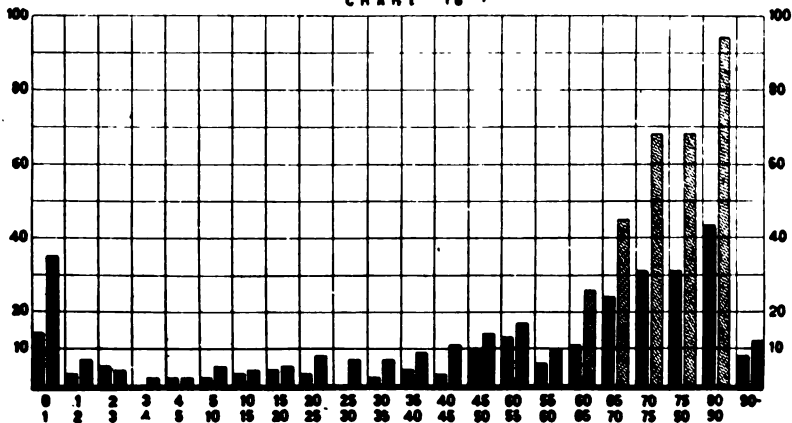
■ - AVERAGE FOR LAST SEVEN YEARS

CHART 17



### COMPARISON BY AGES

CHART 18





## SMALLPOX.

This disease prevailed throughout the year, but usually in very mild form. It was epidemic in a few localities, as shown in the monthly analyses appended. The deaths numbered 8, as against 35 in 1905, said deaths occurring, two in Marion County, four in Jefferson County, and two in Sullivan County.

## SMALLPOX.

Table giving number of deaths by months for the last seven years.

MONTHS.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Total.	Average for seven years.
January.....	1	2	4	51	8	7	.....	73	10
February.....	4	2	2	55	5	11	.....	79	11
March.....	2	4	3	31	3	3	.....	46	7
April.....	3	1	8	21	6	3	1	43	6
May.....	2	3	1	10	7	3	.....	26	4
June.....	2	3	2	3	3	4	.....	17	2
July.....	3	1	15	4	6	3	1	33	5
August.....	.....	.....	1	14	3	.....	.....	18	2
September.....	2	1	7	2	17	.....	2	31	4
October.....	.....	2	10	.....	18	.....	3	33	5
November.....	.....	1	4	1	13	.....	.....	19	3
December.....	.....	1	18	3	8	1	1	32	4
Total.....	19	21	75	195	97	35	8	450	64

State rate 168 2.

## MONTHLY ANALYSIS.

Eighty cases of smallpox were reported in 10 counties, namely: Allen, 52; Elkhart, 1; Kosciusko, 2; Lawrence, 1; Scott, 4; Switzerland, 9; Tippecanoe, 2; Wayne, 1; Whitley, 1. There were no deaths from this disease during the month. The epidemic in Allen County presented no severe cases and no deaths. In the corresponding month last year 238 cases of smallpox, with 7 deaths in 27 counties, were reported.

February—One hundred and fifty-two cases of smallpox were reported in 15 counties, with no deaths. In the corresponding month last year, 381 cases in 35 counties, with 8 deaths. In the preceding month, 80 cases in 10 counties, with no deaths. The disease was epidemic at Fort Wayne in Allen County—62 cases in all. It was also epidemic in one locality in Cass County, 5 cases; epidemic in Clark, 17 cases; epidemic in Crawford, 16 cases; epidemic in Floyd, 14 cases; in Fulton, 8 cases, somewhat distributed; Howard, 5 cases, somewhat distributed; Jackson, 3 cases in one locality; Jay, 1 case; Miami, 5; Perry, 2; Putnam, 1; Switzerland, 5; Tippecanoe, 1; Wells, 1.

**March**—One hundred and twenty-four cases were reported in 16 counties, with no deaths. In the corresponding month last year, 251 cases in 29 counties, with one death. In the preceding month, 152 cases in 15 counties, with no deaths. The disease continued epidemic from last month in Allen County, 38 cases being reported. It was also epidemic in Clark, 8 cases; Crawford, 16; Floyd, 13; LaPorte, 14; Miami, 8; Whitley, 10. In other counties the cases were: Boone, 1; Clinton, 1; Fulton, 3; Greene, 1; Marion, 7; Martin, 1; Putnam, 1; Spencer, 1; Vigo, 1.

**April**—Ninety-seven cases reported from 11 counties, with no deaths. In the corresponding month last year, 151 cases in 18 counties, with 4 deaths. In the preceding month, 124 cases in 16 counties, with no deaths. The disease was epidemic in mild form in the following counties: Adams, 15; Allen, 20; Clark, 18; Floyd, 7; Huntington, 7; Marion, 9; Miami, 15. A few cases not epidemic occurred in the following counties: Clinton, 1; Daviess, 1; Greene, 3; Howard, 7.

**May**—One hundred and twelve cases reported from 14 counties, with no deaths. In the corresponding month last year, 125 cases of smallpox were reported from 11 counties, with 2 deaths. The counties reporting this disease were as follows: Adams, 10; Allen, 44; Clark, 10; Crawford, 2; Fayette, 1; Floyd, 12; Fulton, 1; Henry, 1; Marion, 4; Miami, 2; Putnam, 1; Vanderburgh, 5; Vigo, 1; Washington, 20.

**June**—Sixty-three cases reported from eight counties, with no deaths. In the corresponding month last year, 114 cases in 13 counties, with 4 deaths. In the preceding month, 112 cases in 14 counties, with no deaths. The disease was epidemic in Adams County, 14 cases; Allen, 17 cases; Miami, 11 cases; Shelby, 10 cases. Other counties had the following number of cases: Carroll, 2; Floyd, 2; Grant, 2; Jay, 9; Vigo, 2. All of the cases reported were very mild. In no instance was it reported in severe form.

**July**—Eighteen cases reported from six counties, with one death. The said death was an infant three days old, which was born broken out with the disease. The mother had recovered from a mild attack and had been dismissed from the pest house in Jefferson County. The following counties reported the disease present: Allen, 9 cases; Clark, 1; Jay, 2; Jefferson, 2 cases and 1 death; Shelby, 4, and Vanderburgh, 6. It is very probable this does not represent all of the cases, for we are certain scores of cases of mild smallpox have occurred during this month. In Pulaski County, at Monterey, 100 cases of a mild eruptive disease have occurred. Many phy-

sicians unhesitatingly pronounced this smallpox, while others have termed it "mixed infection." The cases are so mild, and as no deaths have occurred, it has been impossible to establish effective quarantine or to induce the people to vaccinate.

August—Forty cases reported from three counties, with no deaths. The following counties reported the disease present: Fulton, 10 cases; Miami, 10 cases; Pulaski, 20 cases. It is very certain this does not represent all of the cases, for, without doubt, many mild attacks have escaped diagnosis. After seven years of smallpox in the state, very many physicians are found who fail to diagnose the disease in mild form.

September—Fifty-one cases reported from ten counties, with two deaths. The counties reporting the disease present were: Fulton, 6 cases; Jefferson, 16; Johnson, 1; Miami, 4; Montgomery, 3; Shelby, 5; Starke, 6; St. Joseph, 1; Sullivan, 8, with two deaths; Wabash, 1 case. We are again compelled to remark that these figures do not tell the whole story except as to deaths, for, without doubt, many mild attacks have escaped diagnosis and many people have had the disease without even seeing a physician.

October—There were 118 cases reported from nine counties, with three deaths. In the same month last year there were no cases of smallpox, and of course no deaths. The counties reporting the disease present this month were: Allen, 2 cases; Delaware, 1; Fulton, 3; Jefferson, 61; Lagrange, 8; Miami, 3; Ripley, 1; St. Joseph, 28; Vigo, 1. The three deaths occurred in Jefferson County. As remarked every month, it is true that there were cases of this disease which were never reported.

November—There were 216 cases reported from 14 counties, with no deaths. In the same month last year there were 112 cases in 13 counties, with 1 death. The following counties reported the disease present: Clark, 1 case; Daviess, 1; Fulton, 3; Grant, 2; Henry, 1; Jefferson, 83; Jennings, 1; Marshall, 4; Miami, 60; Pulaski, 17; Ripley, 2; Starke, 6; St. Joseph, 33. Although seven years have elapsed since smallpox first appeared in this state, and although it has been present every week in the state in that time, still there are physicians who can not diagnose this disease when it appears in mild form. Mistakes in this respect seem no fewer than were made seven years ago.

December—There were 393 cases reported from 19 counties, with 1 death. In the same month last year, 112 cases from 13 counties, with 1 death. There is a decided increase in cases and a slight increase in area of prevalence. The following counties reported the

disease as present: Allen, 1; Benton, 1; Cass, 2; Clark, 1; Daviess, 1; Elkhart, 2; Fulton, 65; Grant, 5; Howard, 2; Jasper, 2; Jefferson, 62; Marion, 5, and 1 death; Marshall, 8 cases; Miami, 62; Pulaski, 34; Starke, 16; St. Joseph, 12; Wabash, 3; Washington, 8.

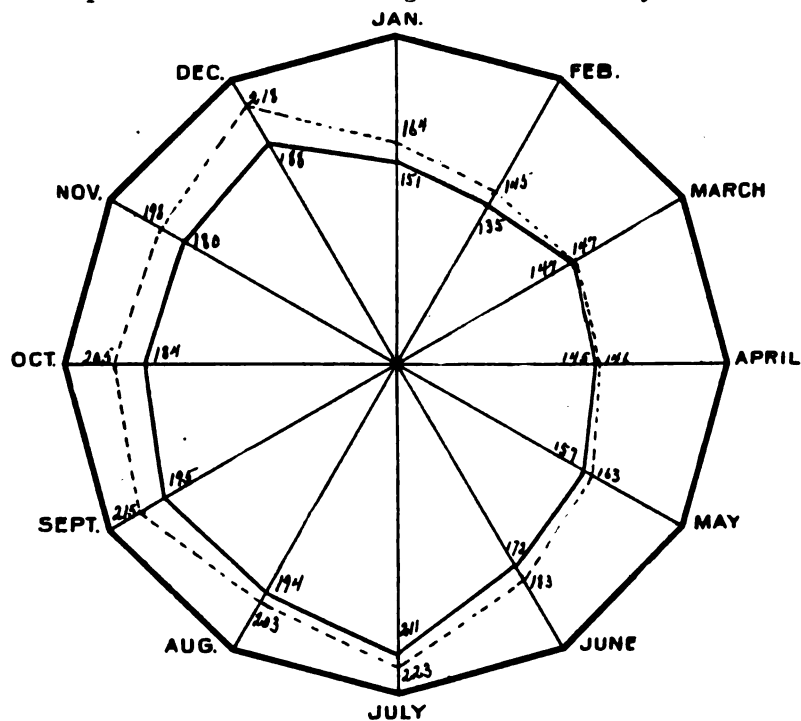
#### VIOLENCE.

The violence deaths numbered 2,210, as against 2,050 in 1905. The term violence includes accidents, suicides and homicides. The accidental deaths numbered 1,836; the suicides, 281, and the homicides, 93. No deaths by mob violence in 1906, and but 1 in 1905. Steam cars, trolley cars and machinery killed 834.

The *Violence Chart* following compares the violence deaths with the average for the last seven years, and by it it appears there was a decided increase in violence deaths over preceding years.

#### VIOLENCE.

Comparison of 1906 with average of the last seven years:



———— Average deaths per month for seven years, 1900-1906.

..... Deaths per month for the year 1906.

Eleven months show more than average.

One month shows same as average.

## MONTHLY RECORD OF VIOLENCE DEATHS.

**January—Violence:** Of the 122 deaths by violence, 5 were murders, all males and all killed by shooting. The suicides numbered 31, 12 being females and 19 males. Concerning the methods of suicide, 4 chose hanging, 3 males and 1 female; 1 chose drowning; 5 gunshots; 1 cutting throat; 12 carbolic acid; 4 morphine and the remainder by other poisons. Of the 196 accidental deaths, 76 were males and 20 females. Railroads caused the deaths of 31 males, and other causes were as follows: Fractures and crushing injuries, 17; gunshots, 6; burns and scalds, 11; drowning, 8; falls and falling objects, 9; mine accidents, 3; electricity, 3; suffocation and poisoning, the remainder.

**February—**The deaths by violence numbered 109—84 males and 25 females. There were 5 murders, 20 suicides and 89 accidental deaths. Of the 5 murders, 3 were males and 2 were females. Two of these were by gunshots, one by knife wound, one by homicide and one by blow on the head. Of the suicides, 14 were males and 6 females. The methods chosen were: 7 males, gunshots; 2 males, hanging; by opium and its compounds, 2 males and 4 females; chloral, 1 female; carbolic acid, 2 males and 1 female; not named, 1 male. Of the accidental deaths, 20 were caused by railroads, 2 by interurban trolley cars, 12 by crushing injuries, 19 by burns and scalds, 5 by gunshots, horses and vehicles, 1; explosions, 7; falling trees, 2; strangulation, 3; frozen to death, 1; dog bite, 1; poison by drugs, 3; not named, 8.

**NOTE.**—It will be observed that death rates this month in comparison with the preceding month are higher, although the number of deaths were fewer. This is because there were three more days in January than in February.

**March—**The deaths by violence numbered 112, 20 females and 92 males. Of the violence deaths, 7 were murders, 20 suicides and 94 accidents. Of the suicides, 9 chose gunshots, 3 hanging, 5 carbolic acid, 3 poisons. Of the accidental deaths, railroads caused 18; street cars and interurbans, 3; crushing injuries, 21; burns and scalds, 12; drowning, 6; gunshots, 8; mine accidents, 6; falls, 7; poisons, 6; other methods, 7.

**April—**The deaths by violence numbered 124, 85 males and 39 females. There were 2 murders, 28 suicides and 94 accidents. Seventeen were killed on steam railroads, 2 on interurbans, 19 by burns and scalds, 10 by drowning, 7 by asphyxiation, 3 by horses, and others in various ways.

May—Deaths by violence numbered 152, an increase over the preceding month of 28, and an increase of 12 over the corresponding month last year. Of the deaths by violence, 8 were murders, 25 suicides and the remainder accidental. Of the suicides, 9 chose carbolic acid, 3 morphine, 4 potash and other poisons, 4 gunshots, and 5 hanging. Of the accidental deaths, 14 were caused by railroads, 1 by trolley cars, 30 by crushing injuries, 11 by burns and scalds, 5 by gunshots, 13 by drowning, 5 by horses and vehicles, poisoning 12, lightning 4, rat-bite 1, not named 7.

June—The deaths by violence numbered 164. In the corresponding month last year, 160. There were 5 murders, 35 suicides, and the remainder accidental. Of the 5 murders, 1 was a woman. Of the suicides, 11 were males, and all chose gunshots; 4 chose hanging, 2 cutting throat, 1 stepping in front of train, and 17 various poisons. Of the accidental deaths, steam railroads killed 26; trolley cars, 5; drowning, 24; various crushing and falling injuries, 29; poisons, 4; horses and vehicles, 4; burns and scalds, 7; electricity, 2; lightning, 4; shooting and other causes, 13.

July—The violence deaths numbered 208. Of these 7 were murders, 13 suicides, and the remainder accidents. Of the murders, 5 were caused by gunshots and one by fracture of skull. Of the suicides, 1 chose gun; 2, hanging; 1, cutting throat; 1, drowning; 2, carbolic acid; 2, strychnine, and 4, morphine. Of the accidental deaths, 36 occurred on steam railroads and 4 on street cars and interurbans. Burns and scalds caused 18 deaths; drowning, 32; gunshots, 6; explosions, falls and like accidents, 39; horses and vehicles, 6; ptomaine poisoning, 3; other poisons, 5; suffocation, 7; lightning, 7; sunstroke, 8; mining accidents, 6; forceps delivery, 3. Cancer caused 108 deaths. This cause of death is recorded more frequently than typhoid fever, diphtheria and scarlet fever.

August—The violence deaths numbered 198. Of these, 7 were murders, 24 suicides, and the remainder accidental. Of the suicides 6 chose shooting and were all men; 7 chose carbolic acid, 2 men and 5 women; 3 chose morphine; 2, concentrated lye; 6, burning, drowning, hanging and cutting throat. Of the accidental deaths, 42 were caused by steam railroads; 4 by trolley cars; 19, crushing injuries; 9, burns and scalds; 8, gunshots; drowning, 25; falls, 11; falling objects, 2; horses and vehicles, 7; lightning and electricity, 9; machinery, 4; sunstroke and heat exhaustion, 5; and the remainder in various ways.

September—The violence deaths numbered 195, against 198 in the preceding month. Of these, 15 were murders, 26 suicides and the

remainder accidental. Of the murders, 3 were females and 12 males. Four were killed by blows, fractured skull following; 7 by gunshots and 4 in various other ways. Of the suicides, 5 chose morphine, 3 women and 2 men; 3 chose carbolic acid, 2 women and 1 man; 6 chose hanging, 2 women and 4 men; 7 chose shooting, 1 woman and 6 men; the remainder chose other methods. Of the accidental deaths, 36 were caused by steam cars, 4 females and 32 males; 7 were caused by street cars and interurbans, 1 female and 6 males; 13 were caused by burns and scalds, 10 females and 3 males; 6 were caused by gunshots, 2 females and 4 males; 32 were killed by various other accidents—8 by horses and vehicles, 8 by suffocation, 11 by drowning, 8 by electricity and lightning, 7 by poison with chemicals, 8 by ptomaine poisons, 1 by headache tablets, and the remainder in various ways.

October—The violence deaths numbered 179. In the corresponding month last year, 155 deaths. The causes were as follows: Seven murders, 22 suicides, and the remainder accidents. Of the suicides, 2 chose hanging, 5 gunshots, 1 asphyxiation, 1 strychnine, 1 cutting, the rest using various methods. The railroads killed 35; trolleys and interurbans, 4; crushing injuries, 18; burns and scalds, 8; fire, gas and powder, 9; drowning, 7; gunshots, 12; mining accidents, 4; falls, 15; horses and vehicles, 8; strangulation, suffocation and other causes killed the remainder.

November—The violence deaths numbered 184. In the corresponding month last year, 159. The causes were as follows: Murders, 7; suicides, 32; accidents, 145. Of the suicides, 4 chose gunshots; 3, cutting; 8, hanging; 1, drowning; 5, carbolic acid; 2, arsenic; 4, morphine; 4, other poisons; 1, artificial gas. Of the accidental deaths, steam railroads killed 41, street cars and interurban cars, 4; fractures of skulls, of large bones and crushing injuries, 16; burns and scalds, 30; gunshots, 8; drowning, 4; falls, 12; mining, 2; machinery, 3; suffocation and strangulation, 7; asphyxiation and artificial gas, 2; electricity, 5; vehicles, 2; poison, 7; hanging, 1.

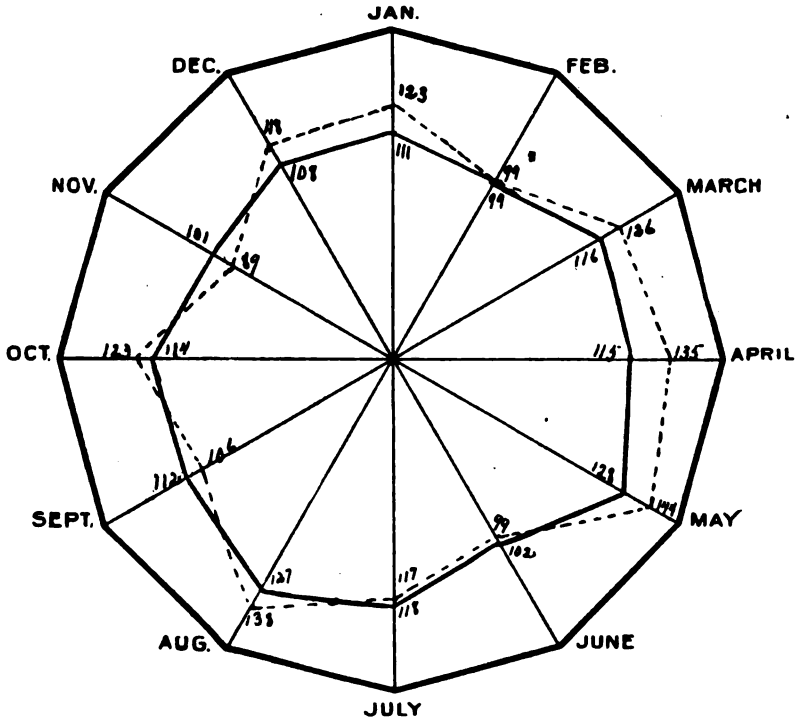
December—The violence deaths numbered 185. In the corresponding month last year, 137. The causes were as follows: Murder, 11; suicides, 28; accidental, 146. Of the murders, gunshots, 8; stabbing, 3. Of the suicides, arsenic, 3; morphine, 4; carbolic acid, 7; shooting, 5; cutting throat, 2; hanging, 4; drowning, 2; jumping from high window, 1. Of the accidental, steam railroads killed 40; street cars and interurbans, 7; crushing injuries, 14; machinery, 7; burns and scalds, 14; gunshots, 16; drowning, 4; falls, 11; horses and vehicles, 3; asphyxiation, 11; mining, 4, and the remainder by various methods.

## CANCER.

Cancer is an increasing cause of death in Indiana. The chart following shows this to be true. The number of cancer deaths in 1906 was 1,417, the rate being 53.5 per 100,000. Six years ago cancer and typhoid caused about the same number of deaths annually, but typhoid is now decreasing, the rate being 34.4 per 100,000, which is 19.1 less than the cancer rate. The cancer, tuberculosis and typhoid map on page — shows the ratio of cancer by congressional districts, and examination of the same will discover the fact that cancer prevails to a greater degree in the northern centers than in the central or southern.

## CANCER.

Comparison of 1906 with average of the last seven years:



———— Average deaths per month for seven years, 1900-1906  
 ..... Deaths per month for the year 1906.  
 Seven months show more than average.  
 Four months show less than average.  
 One month shows same as average.



## MONTHLY ANALYSIS OF DISEASE PREVALENCE.

**January**—The most prevalent maladies were bronchitis and tonsilitis. Influenza was most prevalent in January of last year. Pneumonia, which had second place in January, 1905, has fourth place this January. The order of prevalence was as follows: Bronchitis, tonsilitis, rheumatism, pneumonia, scarlet fever, influenza, typhoid fever (enteric), diphtheria and membranous croup, pleuritis, diarrhoea, whooping cough, intermittent and remittent fever, erysipelas, measles, inflammation of bowels, typho-malaria fever, cerebro-spinal meningitis, cholera morbus, dysentery, smallpox, puerperal fever, cholera infantum.

**February**—The most prevalent malady was pneumonia; 78 per cent. of the regular observers testified to this effect. Pneumonia was fourth in area of prevalence in the preceding month. In the corresponding month last year, pneumonia was second in area of prevalence. The order of prevalence was as follows: Pneumonia, tonsilitis, bronchitis, rheumatism, influenza, scarlet fever, pleuritis, typhoid fever (enteric), diphtheria and membranous croup, whooping cough, intermittent and remittent fever, diarrhoea, erysipelas, measles, inflammation of bowels, smallpox, dysentery, puerperal fever, typho-malaria fever, cholera morbus, cerebro-spinal meningitis, cholera infantum.

**March**—The most prevalent malady was tonsilitis. Pneumonia was reported as the most prevalent in the preceding month. In the corresponding month last year influenza led as most prevalent. The order of prevalence was as follows: Tonsilitis, pneumonia, bronchitis, influenza, rheumatism, pleuritis, whooping cough, scarlet fever, typhoid fever (enteric), intermittent fever, diarrhoeal, erysipelas, measles, diphtheria and membranous croup, smallpox, puerperal fever, inflammation of bowels, typho-malaria fever, cerebro-spinal meningitis, dysentery, cholera morbus, cholera infantum.

**April**—The most prevalent malady was tonsilitis. This was also the case in the preceding month. The order of prevalence was as follows: Tonsilitis, rheumatism, pneumonia, bronchitis, influenza, scarlet fever, whooping cough, intermittent and remittent fever, measles, pleuritis, diarrhoea, typhoid fever (enteric), erysipelas, diphtheria and membranous croup, inflammation of bowels, cerebro-spinal meningitis, typho-malarial fever, smallpox, cholera morbus, puerperal fever, dysentery, cholera infantum.

**May**—Rheumatism was reported as the most prevalent malady. Tonsilitis was reported first in the preceding month. The order of prevalence was as follows: Rheumatism, tonsilitis, bronchitis, diar-

# CHART SHOW

## DEATHS IN IND TUBERCULOSIS FEVER, FOR

CONGRESSIONAL DISTRICTS.	POPULATION Census 1900.	Deaths.
First .....	197,984	
Second .....	203,118	
Third .....	183,729	
Fourth .....	180,712	
Fifth .....	206,682	1
Sixth .....	188,925	1
Seventh .....	219,655	1
Eighth .....	245,793	1
Ninth .....	207,404	1
Tenth .....	215,485	1
Eleventh .....	207,224	
Twelfth .....	179,504	1
Thirteenth .....	212,334	1
Totals and Averages.	2,648,549	11.



rhoea, whooping cough, influenza, measles, scarlet fever, intermittent and remittent fever, typhoid fever (enteric), pneumonia, pleuritis, inflammation of bowels, erysipelas, diphtheria and membranous croup, cholera morbus, smallpox, dysentery, cholera infantum, typho-malaria fever, cerebro-spinal meningitis, puerperal fever.

June—The most prevalent malady was rheumatism, which was also most prevalent in the corresponding month last year. In the preceding month, tonsilitis was first. The order of prevalence was as follows: Rheumatism, diarrhoea, tonsilitis, bronchitis, intermittent and remittent fever, cholera morbus, typhoid fever (enteric), scarlet fever, whooping cough, cholera infantum, dysentery, measles, inflammation of bowels, pneumonia, pleuritis, diphtheria and membranous croup, influenza, erysipelas, smallpox, typho-malaria fever, cerebro-spinal meningitis, puerperal fever.

July—The most prevalent malady was diarrhoea. Rheumatism was most prevalent in both May and June. Cholera morbus, which was seventh in June, rose to sixth place in July. The order of prevalence was as follows: Diarrhoea, cholera morbus, tonsilitis, rheumatism, dysentery, cholera infantum, typhoid fever (enteric), intermittent and remittent fever, inflammation of bowels, bronchitis, scarlet fever, whooping cough, diphtheria and membranous croup, erysipelas, pleuritis, typho-malarial fever, pneumonia, measles, influenza, cerebro-spinal meningitis, smallpox, puerperal fever.

August—The most prevalent malady was diarrhoea, as was also the case in the preceding month. Rheumatism, which was most prevalent in May and June, falls to fifth place in August. The order of prevalence was as follows: Diarrhoea, cholera morbus, typhoid fever (enteric), cholera infantum, rheumatism, tonsilitis, dysentery, intermittent and remittent fever, bronchitis, inflammation of bowels, scarlet fever, typho-malaria fever, influenza, diphtheria and membranous croup, pleuritis, pneumonia, whooping cough, erysipelas, cerebro-spinal meningitis, measles, puerperal fever, smallpox.

September—The most prevalent malady was cerebro-spinal meningitis. Rheumatism was reported as very prevalent. The order of prevalence was as follows: Cerebro-spinal meningitis, rheumatism, tonsilitis, diarrhoea, typhoid fever (enteric), cholera morbus, cholera infantum, bronchitis, dysentery, intermittent and remittent fever, diphtheria and membranous croup, inflammation of bowels, pneumonia, scarlet fever, influenza, typho-malarial fever, pleuritis, erysipelas, smallpox, whooping cough, measles, puerperal fever.

October—The most prevalent malady was tonsilitis, as against rheumatism in the preceding month and against typhoid fever in the corresponding month last year. Typhoid fever was second in prevalence. The order of prevalence was as follows: Tonsilitis, typhoid fever, rheumatism, bronchitis, diphtheria and membranous croup, intermittent and remittent fever, scarlet fever, influenza, diarrhoea, pneumonia, pleuritis, inflammation of the bowels, erysipelas, typho-malaria fever, cholera infantum, cholera morbus, dysentery, whooping cough, smallpox, measles, cerebro-spinal meningitis and puerperal fever.

November—The most prevalent maladies were tonsilitis and bronchitis, as against tonsilitis and typhoid fever in the preceding month. Bronchitis and tonsilitis were also the most prevalent diseases in the corresponding month last year. The order of prevalence was as follows: Tonsilitis, bronchitis, rheumatism, pneumonia, typhoid fever (enteric), influenza, diphtheria and membranous croup, intermittent and remittent fever, scarlet fever, pleuritis, diarrhoea, erysipelas, inflammation of the bowels, whooping cough, typho-malaria fever, smallpox, dysentery, measles, cholera infantum, cerebro-spinal meningitis, cholera morbus, puerperal fever.

December—As in the preceding month, tonsilitis and bronchitis were the most prevalent maladies. Indeed, there is little change in December as compared with November in regard to disease prevalence. The order of prevalence was as follows: Tonsilitis, bronchitis, rheumatism, pneumonia, influenza, typhoid fever (enteric), diphtheria and membranous croup, pleuritis, scarlet fever, diarrhoea, intermittent and remittent fever, erysipelas, measles, inflammation of the bowels, smallpox, whooping cough, typho-malaria fever, dysentery, cholera morbus, cerebro-spinal meningitis, cholera infantum.

# TABLES OF ANNUAL STATISTICAL REPORT FOR THE YEAR 1906.

TABLE 1.

*Deaths in Indiana During the Year Ending December 31, 1906,  
Statistically Classified by the International System, with Rates  
Per 100,000 Population, Estimated According to United States  
Census Bureau.*

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
I. GENERAL DISEASES—EPIDEMICS.			
1	Typhoid fever.....	913	34.4
2	Exanthematous typhus.....		
3	Recurrent fever.....	102	3.8
4	Intermittent and malarial fever.....	8	.3
5	Varicella or smallpox.....		
6	Measles.....	23	.8
7	Scarlatina.....	101	3.8
8	Whooping cough.....	157	5.9
9	Croup.....	24	.9
9a	Diphtheria.....	378	14.2
10	Influenza.....	224	8.4
11	Miliary fever.....		
12	Asiatic cholera.....	18	.6
13	Cholera nostras.....	235	8.8
14	Dysentery.....		
15	Bubonic plague.....		
16	Yellow fever.....		
17	Leprosy.....	86	3.2
18	Erysipelas.....	7	.2
19	Other epidemic diseases.....		
20	Purulent septicaemia and infection.....	227	8.5
21	Glanders and farcy.....		
22	Malignant pustule and anthrax.....		
23	Rabies.....	5	.1
24	Actinomycosis trichinosis, etc.....	2	.07
25	Pellagra.....		
26	Tuberculosis of the larynx.....	58	2.1
27	Tuberculosis of the lungs.....	3,796	143.2
28	Tuberculosis of the meninges.....	185	6.9
29	Abdominal tuberculosis.....	234	8.8
30	Potts' disease.....	19	.7
31	Cold abscess.....	3	.1
32	White swelling.....	17	.6
33	Other tuberculous affections.....	67	2.5
34	General tuberculosis.....	77	2.9

TABLE 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
35	Scrofula.....	12	.4
36	Syphilis.....	75	2.8
36a	Soft chancre.....		
37	Gonorrhea (5 years and over).....	2	.07
38	Gonorrhea (under 5 years).....	1	.03
39	Cancer and other tumors of the buccal cavity.....	57	2.1
40	Cancer and other tumors of the stomach and liver.....	504	19.0
41	Cancer and other tumors of the peritoneum, intestines and rectum.....	133	5.0
42	Cancer and other tumors of the female genital organs.....	213	8.0
43	Cancer and other tumors of the breast.....	118	4.4
44	Cancer and other tumors of the skin.....	91	3.4
45	Cancer and other tumors of other organs.....	301	11.3
46	Other tumors.....	30	1.4
47	Acute articular rheumatism.....	145	5.4
48	Chronic rheumatism and gout.....	129	4.8
49	Scurvy.....	5	.1
50	Diabetes.....	269	10.1
51	Exophthalmic goitre.....	22	.8
52	Addison's disease.....	11	.4
53	Leukemia.....	23	.8
54	Anemia chlorosis.....	93	3.5
55	Other general diseases.....	33	1.2
56	Alcoholism, acute and chronic.....	96	3.6
57	Chronic lead poisoning.....	2	.07
58	Other chronic poisonings (occupational).....	1	.03
59	Other chronic poisonings.....	13	.4
II. LOCAL DISEASES—DISEASES OF THE NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.			
60	Encephalitis.....	78	2.9
61	Simple meningitis.....	240	9.0
61a	Epidemic cerebro-spinal meningitis.....	481	18.1
62	Progressive locomotor ataxia.....	58	2.1
63	Other diseases of the spinal cord.....	136	5.1
64	Congestion and hemorrhage of the brain.....	1,496	56.4
65	Softening of the brain.....	102	3.8
66	Paralysis, cause unspecified.....	777	29.3
67	General paralysis.....	87	3.2
68	Other forms of insanity.....	81	3.0
69	Epilepsy.....	130	4.9
70	Convulsions (not puerperal).....	14	.5
71	Convulsions of infants.....	254	9.5
72	Tetanus.....	64	2.4
73	Chorea.....	7	.2
74	Other nervous diseases.....	134	5.0
75	Diseases of the eye.....	1	.03
76	Diseases of the ear.....	16	.6
III. DISEASES OF THE CIRCULATORY SYSTEM.			
77	Pericarditis.....	58	2.1
78	Acute endocarditis.....	105	3.9
79	Organic heart diseases.....	2,208	83.3
80	Angina pectoris.....	243	9.1
81	Diseases of the arteries, atheroma, aneurism, etc.....	239	9.0
82	Embolism and thrombosis.....	59	2.2
83	Diseases of the veins (varices, hemorrhoids, phlebitis).....	12	.4
84	Diseases of the lymphatics, lymphangitis, etc.....	4	.1
85	Hemorrhage.....	47	1.7
86	Other diseases of the circulatory system.....	1	.03

TABLE 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
IV. DISEASES OF THE RESPIRATORY SYSTEM.			
87	Diseases of the nasal fossae.....	4	.1
88	Diseases of the larynx.....	39	1.4
89	Diseases of the thyroid body.....	6	.2
90	Acute bronchitis.....	265	10.0
91	Chronic bronchitis.....	195	7.3
92	Broncho-pneumonia.....	576	21.7
93	Pneumonia.....	2,478	93.5
94	Pleurisy.....	74	2.7
95	Congestion and apoplexy of the lungs.....	338	12.7
96	Gangrene of the lungs.....	10	.3
97	Asthma.....	105	3.9
98	Pulmonary emphysema.....	5	.1
99	Other diseases of the respiratory system (phthisis excepted).....	107	4.0
V. DISEASES OF THE DIGESTIVE SYSTEM.			
100	Diseases of the mouth and adnexa.....	24	.9
101	Diseases of the pharynx.....	42	1.5
102	Diseases of the esophagus.....	6	.2
103	Ulcer of the stomach.....	69	2.6
104	Other diseases of the stomach (cancer excepted).....	630	23.7
105	Diarrhoea and enteritis (under 5 years of age).....	1,823	68.8
105a	Chronic diarrhoea.....	115	4.3
106	Diarrhoea and enteritis (five years and over).....	327	12.3
107	Intestinal parasites.....	4	.1
108	Hernia and intestinal obstructions.....	295	11.1
109	Other diseases of the intestines.....	140	5.2
110	Acute yellow atrophy of the liver.....	4	.1
111	Hyalid tumors of the liver.....		
112	Cirrhosis of the liver.....	261	9.8
113	Biliary calculi.....	74	2.7
114	Other diseases of the liver.....	252	9.5
115	Diseases of the spleen.....	9	.3
116	Simple peritonitis (not puerperal).....	265	10.0
117	Other diseases of the digestive system.....	4	.1
118	Appendicitis and abscess of the iliac fossae.....	174	6.5
VI. DISEASES OF THE GENITO-URINARY SYSTEM.			
119	Acute nephritis.....	230	8.6
120	Bright's disease.....	1,549	58.4
121	Other diseases of the kidneys and their adnexa.....	55	2.0
122	Calculi of the urinary tract.....	8	.3
123	Diseases of the bladder.....	102	3.8
124	Diseases of the urethra.....	6	.2
125	Diseases of the prostate.....	57	2.1
126	Diseases of the male genital organs.....		
127	Metritis.....	4	.1
128	Uterine hemorrhage (non-puerperal).....	7	.2
129	Uterine tumor.....	29	1.0
130	Other diseases of the uterus.....	32	1.2
131	Cysts and other ovarian tumors.....	19	.7
132	Other diseases of the female genital organs.....	20	.7
133	Non-puerperal diseases of the breast.....	1	.03
VII. PUERPERAL DISEASES.			
134	Accidents of pregnancy.....	44	1.6
135	Puerperal hemorrhage.....	23	.8
136	Other accidents of labor.....	14	.5
137	Puerperal septicemia.....	145	5.4



TABLE 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
138	Albuminuria and puerperal eclampsia.....	61	2.3
139	Phlegmasia alba dolens, puerperal.....	1	.03
140	Other puerperal accidents.....	31	1.1
141	Puerperal diseases of the breast.....		
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUES.			
142	Gangrene.....	113	4.2
143	Carbuncle.....	14	.5
144	Acute abscess phlegmon.....	22	.8
145	Other diseases of the skin and adnexa.....	21	.7
IX. DISEASES OF THE LOCOMOTOR SYSTEM.			
146	Affections of the bones.....	39	1.4
147	Arthritis and other diseases of the joints.....	3	.1
148	Amputation.....	1	.03
149	Other diseases of the organs of locomotion.....		
X. MALFORMATIONS.			
150	Malformations.....	284	10.7
XI. DISEASES OF INFANCY.			
151	Congenital debility, icterus.....	1,143	43.1
152	Other diseases of early infancy.....	73	2.7
153	Lack of care.....	550	20.7
XII. DISEASES OF OLD AGE.			
154	Senile debility.....	1,280	47.1
XIII. EXTERNAL CAUSES.			
A.—Suicides.			
155	Suicide by poison.....	139	5.2
156	Asphyxia.....	3	.1
157	Hanging or strangulation.....	49	1.8
158	Drowning.....	13	.4
159	Firearms.....	82	3.0
160	Cutting instruments.....	14	.5
161	Jumping from high places.....	1	.03
162	Crushing.....		
163	Other suicides.....	20	.7
B.—Accidents.			
164	Fractures.....	254	9.5
165	Dislocations.....	4	.1
166	Other accidental injuries.....	834	31.4
167	Burns and scalds.....	216	8.1
168	Burning by corrosive substances.....		
169	Sunstroke.....	22	.8
170	Freezing.....	5	.1
171	Electrical shock.....	45	1.6
172	Accidental drowning.....	159	6.0
173	Inanition.....	138	5.2
174	Inhalation of noxious gases (not suicidal).....	20	.7
175	Other acute poisonings.....	102	3.8
176	Other external violence.....	135	5.0
C.—Homicides.			
176a	Homicide.....	93	3.5
176b	Mob violence.....		

TABLE 1—Continued.

Classification Number.	CAUSES OF DEATH.	Number of Deaths.	Death Rate Per 100,000.
	<b>XIV. CAUSES ILL-DEFINED.</b>		
177	Dropsy.....	106	4.0
178	Sudden death (not puerperal).....	4	.1
179	Causes not specified or ill-defined.....	198	7.4
	<b>XV. STILLBIRTHS.</b>		
180	Stillbirths.....	2,149	81.1
	All causes.....	35,992	1,358.9

TABLE No. 2.

*Deaths from all Causes, by Months, Ages, Color, Nationality and Condition, for the Year Ending December 31, 1906, International Classification.*

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
<b>I. GENERAL DISEASES. EPIDEMIC</b>												
1. Typhoid fever.....	39	29	40	32	39	29	53	96	155	168	146	86
2. Exanthematous typhus.....												
3. Recurrent fever.....												
4. Intermittent and malarial fever.....	3	8	3	6	8	6	7	14	15	16	12	4
5. Variola or smallpox.....				1			1		2	8		1
6. Measles.....	2	2		7	4	3		1			2	2
7. Scarletina.....	11	9	12	7	7	10	7	3			14	7
8. Whooping cough.....	6	11	22	26	31	12	14	7	6	8	4	12
9. Croup.....	2	5	4				1	1	5	4	2	8
9a. Diphtheria.....	31	18	22	15	8	12	10	12	35	73	80	63
10. Influenza.....												
11. Military fever.....	53	44	48	30	7	2	4	2	3	8	11	12
12. Asiatic cholera.....												
13. Cholera nostris.....												
14. Dysentery.....	4	6	11	6	6	5	8	6	3	1		
15. Bubonic plague.....									66	32	14	10
16. Yellow fever.....												
17. Leprosy.....												
18. Erysipelas.....	11	9	12	13	6	4	5	3	3	4	8	8
19. Other epidemic diseases.....		3			1	2				1		
20. Purulent septicaemia and infection.....												
21. Glanders and farcy.....												
22. Malignant pustule and anthrax.....												
23. Rabies.....	1			1				3				
24. Actinomycosis, trichinosis, etc.....	1											1



TABLE No. 2—Continued.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
64. Congestion and hemorrhage of the brain.	128	130	160	144	114	133	103	106	115	111	119	132
65. Softening of the brain.	4	10	6	6	5	9	7	10	9	12	14	10
66. Paralysis, cause unspecified.	69	68	79	76	58	43	54	58	59	55	74	80
67. General paralysis.	8	2	8	4	10	3	12	13	2	5	7	9
68. Other forms of insanity.	4	8	7	5	10	3	9	9	3	10	7	6
69. Epilepsy.	12	13	12	10	18	10	13	11	4	10	5	12
70. Convulsions (not puerperal).	2	2	2	2	13	2	1	20	21	10	1	1
71. Convulsions of infants.	34	21	29	27	13	19	23	6	6	5	7	15
72. Tetanus.	5	3	3	4	6	1	16	6	6	5	7	5
73. Chorea.	1	1	1	1	2	2	2	2	2	4	10	1
74. Other nervous diseases.	12	15	11	10	10	12	15	9	11	4	10	15
75. Diseases of the eye.	2	4	4	1	1	1	2	2	1	1	3	1
76. Diseases of the ear.	2	2	4	1	1	1	2	2	1	1	3	3
III. DISEASES OF THE CIRCULATORY SYSTEM.												
77. Pericarditis.	7	5	8	5	4	8	3	5	3	4	4	2
78. Acute endocarditis.	13	9	14	12	3	7	6	8	5	6	12	11
79. Organic diseases of the heart.	188	179	213	179	206	189	156	151	160	163	223	201
80. Angina pectoris.	27	22	15	17	25	15	18	13	24	22	24	21
81. Diseases of the arteries, aneurism, etc.	16	11	27	13	19	19	23	18	19	29	29	16
82. Embolism and thrombosis.	6	1	7	7	8	2	6	5	3	6	2	6
83. Diseases of the veins (varices, hemorrhoids, phlebitis).	1	1	1	2	2	2	2	2	2	1	2	2
84. Diseases of the lymphatics, lymphangitis, etc.	7	5	4	5	1	2	8	3	3	1	2	3
85. Hemorrhage.	7	5	4	5	4	2	8	3	3	1	2	3
86. Other diseases of the circulatory system.	5	5	4	5	4	4	4	1	4	1	1	1
IV. DISEASES OF THE RESPIRATORY SYSTEM.												
87. Diseases of the nasal fossae.	1	1	1	1	1	1	1	1	4	3	5	2
88. Diseases of the larynx.	7	4	2	2	1	1	1	1	4	3	5	9
89. Diseases of the thyroid body.	36	24	45	25	24	8	10	4	4	17	30	2
90. Acute bronchitis.	21	15	20	23	16	10	2	14	16	17	19	23
91. Chronic bronchitis.	21	15	20	23	16	10	2	14	16	17	19	23

92.	Broncho-pneumonia.....	78	68	86	64	43	22	15	12	44	57	69
93.	Pleurisy.....	370	330	412	309	104	73	53	57	125	216	307
94.	Pneumia.....	8	3	5	8	8	5	5	5	5	7	10
95.	Congestion and apoplexy of the lungs.....	42	41	43	31	25	24	20	13	18	20	34
96.	Gangrene of the lungs.....	1	7	2	12	6	1	1	2	5	16	1
97.	Asthma.....	7	18	18	1	1	9	7	7	4	2	7
98.	Pulmonary emphysema.....	1	1	1	1	1	1	1	1	1	1	9
99.	Other diseases of the respiratory system (phtisis excepted).....	14	9	13	4	8	6	11	6	12	9	9

## V. DISEASES OF THE DIGESTIVE SYSTEM.

100.	Diseases of the mouth and adnexa.....	1	3	5	2	1	3	1	4	4	2	2
101.	Diseases of the pharynx.....	3	3	5	6	1	1	2	2	7	5	7
102.	Diseases of the oesophagus.....	1	1	1	1	1	1	1	1	1	1	1
103.	Ulcer of the stomach.....	5	4	4	5	5	7	8	8	6	4	5
104.	Other diseases of the stomach (cancer excepted).....	53	57	39	43	45	33	62	78	56	68	49
105.	Diarrhoea and enteritis (under 5 years of age).....	28	25	29	39	42	71	321	494	447	232	39
106.	Chronic diarrhoea.....	6	11	8	15	7	4	10	8	11	22	11
107.	Diarrhoea and enteritis (5 years and over).....	16	19	16	20	17	20	32	58	50	37	19
108.	Intestinal parasites.....	2	2	2	2	1	1	1	1	1	1	1
109.	Hernia and intestinal obstructions.....	21	15	14	30	20	31	26	31	27	26	26
110.	Other diseases of the intestines.....	9	7	15	12	12	11	9	15	21	7	13
111.	Acute yellow atrophy of the liver.....	1	1	1	1	1	1	1	1	1	1	1
112.	Hepatic tumour of the liver.....	13	15	21	24	33	20	27	21	22	21	20
113.	Cirrhosis of the liver.....	5	9	2	8	9	5	2	6	8	6	4
114.	Biliary calculi.....	18	16	18	34	23	28	18	22	16	26	17
115.	Other diseases of the liver.....	2	2	1	1	1	2	1	1	2	1	16
116.	Diseases of the spleen.....	24	27	18	31	23	20	19	27	22	20	14
117.	Simple peritonitis (not puerperal).....	13	11	17	11	18	13	19	26	16	13	11
118.	Other diseases of the digestive system.....	13	11	17	11	18	13	19	26	16	13	6
119.	Appendicitis and abscess of the iliac fossae.....	13	11	17	11	18	13	19	26	16	13	6

## VI. DISEASES OF THE GENITO-URINARY SYSTEM.

119.	Acute nephritis.....	25	16	31	16	19	23	17	17	14	18	14
120.	Bright's disease.....	123	127	129	129	120	116	135	127	110	133	156
121.	Other diseases of the kidneys and their adnexa.....	8	5	2	2	4	3	7	0	3	3	7
122.	Calculi of the urinary tract.....	7	11	6	11	13	6	11	8	7	6	1
123.	Diseases of the bladder.....	7	11	6	11	13	6	11	8	7	6	5
124.	Diseases of the urethra.....	1	1	1	1	1	1	1	1	1	1	2
125.	Diseases of the prostate.....	4	5	2	6	8	7	1	4	4	6	5
126.	Diseases of the male genital organs.....	1	1	1	1	1	1	1	1	1	1	1
127.	Metritis.....	1	1	2	2	2	2	2	2	2	2	2
128.	Uterine hemorrhage (non-puerperal).....	1	1	2	2	2	2	2	2	2	2	2

TABLE No. 2—Continued.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
VII. PUERPERAL DISEASES												
129. Uterine tumor.....	2	2	2	3	5	2	2	1	3	2	6	3
130. Other diseases of the uterus.....	4	2	8	1	1	1	3	3	1	2	4	2
131. Cystis and other ovarian tumors.....	3	3		1		2	2	2	3	2		1
132. Other diseases of the female genital organs.....	1		2	1		2	3	2	2	3	4	
133. Non-puerperal diseases of the breast.....									1			
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUES.												
134. Accidents of pregnancy.....	3	1	1	5	3		12	5	7	2	4	1
135. Puerperal hemorrhage.....		4	2	2	3	3			4	1	1	3
136. Other accidents of labor.....	3	1	1	1	1	2	1	1	1	1	1	
137. Puerperal septemia.....	13	28	19	19	11	9	2	7	6	8	9	14
138. Albuminuria and puerperal eclampsia.....	5	5	2	7	8	6	8	4	4	7	5	
139. Phlegmasia alba dolens, puerperal.....									1			
140. Other puerperal accidents.....	2	4	3	3	4	4	2	3	1	2	2	1
141. Puerperal diseases of the breast.....												
IX. DISEASES OF THE LOCOMOTOR SYSTEM.												
142. Gangrene.....	5	15	16	18	14	6	3	5	8	3	9	11
143. Carbuncle.....	2	1		2				1	3	3	2	
144. Acute abscess, phlegmon.....	4	2	2		1	2	3	1	1	3	2	3
145. Other diseases of the skin and adnexa.....	4		2			2	2	4	1	2	4	
X. MALFORMATIONS.												
146. Affections of the bones.....	3	4		9	4	1	3	5	2	1	4	3
147. Arthritis and other diseases of the joints.....		1							1		1	
148. Amputation.....												
149. Other diseases of the organs of locomotion.....												
150. Malformations.....	15	25	23	24	30	25	19	16	26	27	21	33

## XI. DISEASES OF INFANCY.

151. Congenital debility, tetanus.	95	90	110	105	97	98	86	103	101	91	75	92
152. Other diseases of early infancy.	5	12	8	5	6	1	2	2	3	6	4	19
153. Lack of care.	48	53	53	47	28	36	48	42	62	52	43	38

## XII. DISEASES OF OLD AGE.

154. Senile debility.	103	120	120	106	95	78	107	99	123	120	94	113
-----------------------	-----	-----	-----	-----	----	----	-----	----	-----	-----	----	-----

## XIII. EXTERNAL CAUSES

## A.—Suicides.

155. Suicide by poison.	17	9	8	7	20	12	5	11	10	11	15	14
156. Asphyxia.		1								1	1	
157. Hanging or strangulation.	5	2	3	6	3	4	2	2	7	2	9	4
158. Drowning.		1		1	3	1	1	1	3	1	1	1
159. Firearms.	7	7	9	10	-3	12	1	9	8	7	4	5
160. Cutting instruments.	2			2		2	1	1		1	3	2
161. Jumping from high places.												1
162. Crushing.												
163. Other Suicides.	3	1	1	4		3	2	3	2	1		

## B.—Accidents.

164. Fractures.	24	17	21	14	22	23	14	21	32	30	18	18
165. Dislocations.		1		1		1			1			
166. Other accidental injuries.	59	54	54	47	53	55	98	76	78	91	73	96
167. Burns and scalds.	12	25	15	21	12	8	20	13	15	18	28	29
168. Burning by corrosive substances.												
169. Sunstroke.						6	8	6	1		1	1
170. Freezing.	1	2									1	1
171. Electrical shock.	3				4	8	6	10	7	1	5	1
172. Accidental drowning.	10	3	8	10	14	28	32	25	11	8	5	5
173. Insanition.	7	8	6	5	5	9	11	16	28	24	15	4
174. Inhalation of noxious gases (not suicidal).	2	2				1	1	1			2	2
175. Other acute poisonings.	4	5	8	3	16	8	10	9	15	12	8	3
176. Other external violence.	11	13	12	10	4	6	15	9	6	8	17	24

## C.—Homicides.

176a. Homicide.	4	4	8	4	9	6	7	6	13	13	8	11
176b. Mob violence.												



TABLE No. 2—Continued.

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
XIV. CAUSES IL-DEFINED.												
177. Dropsy .....	9	9	12	13	8	6	7	6	9	11	9	7
178. Sudden death (not puerperal) .....		1					1		1		1	
179. Causes not specified or ill-defined .....	12	10	4	10	9	12	16	22	20	32	49	2
XV. STILLBIRTHS.												
180. Stillbirths .....	197	169	193	184	184	184	187	179	173	174	172	153
Grand total .....	3,110	2,924	3,321	3,142	2,765	2,429	2,845	3,136	3,146	3,101	3,049	3,024

TABLE No. 2—Continued.

*Deaths from all Causes by Months, Ages, Color, Nationality and Condition, for the Year Ending December 31, 1906. International Classification.*

	0	1	2	3	4	5	10	15	20	25	30	35	40	45	50	55	60	65	70
<b>I. GENERAL DISEASES. EPIDEMIC.</b>																			
1. Typhoid fever.....	12	11	13	19	18	64	85	138	120	94	76	62	34	37	36	22	18	16	
2. Exanthematous typhus.....																			
3. Recurrent fever.....																			
4. Intermittent and malarial fever.....	13	10	1	2	2	2	1	7	3	4	5	6	2	2	5	3	3	7	
5. Variola or smallpox.....	4					2			1							1			
6. Measles.....	5	9	1		1	1		1	1	1	2	1							
7. Scarletina.....	5	13	10	15	10	27	8	2	10		1								
8. Whooping cough.....	112	27	6	1	4	4	1		1										
9. Croup.....	9	5	2	1	1	6													
9a. Diphtheria.....	17	40	49	46	57	118	38	10	1		1		2		1				
10. Influenza.....	14	3	5		2	2	3	4	3		2	4	3	10	13	6	11	24	
11. Miliary fever.....																			
12. Asiatic cholera.....																			
13. Cholera nostras.....		1		1		1													
14. Dysentery.....						4				6	6	7	7	4	13	6	15	20	
15. Bubonic plague.....																			
16. Yellow fever.....																			
17. Leprosy.....																			
18. Erysipelas.....	23	4	2				2		1	4	2	2	4	3	3	3	2	6	
19. Other epidemic diseases.....	4					2													
20. Purulent septicaemia and infection.....	23	5	3	4	2	5	7	8	12	23	16	16	12	7	16	12	16	8	
21. Glanders and farcy.....																			
22. Malignant pustule and anthrax.....																			
23. Rabies.....			1			1	1		1	1		1							
24. Actinomycosis, trichinosis, etc.....																			



54. Anemia, chlorosis.....	7	4	1	3	1	1	1	4	2	5	1	1	9	6	10	11	5	8	7
55. Other general diseases.....	4	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	3
56. Alcoholism, acute and chronic.....																		8	8
57. Chronic lead poisoning.....																		1	
58. Other chronic poisonings (occupational).....																			
59. Other chronic poisonings.....																		2	3
<b>II. DISEASES OF THE NERVOUS SYSTEM AND ORGANS OF SENSE.</b>																			
60. Encephalitis.....	29	11	6	2	4	8	3	1	3	3	2	1	1	1	1	3	3	4	1
61. Simple meningitis.....	74	26	15	12	7	16	8	11	10	7	7	7	3	7	11	8	3	4	5
61a. Epidemic cerebro-spinal meningitis.....	160	76	33	16	14	37	21	29	19	9	8	11	6	6	7	7	6	3	6
62. Progressive locomotor ataxia.....																		7	1
63. Other diseases of the spinal cord.....	9	3	4	4	2	5	6	3	3	2	5	3	3	4	6	7	12	10	6
64. Congestion and hemorrhage of the brain.....	75	17	6	3	2	7	4	7	13	15	24	22	54	72	101	116	155	197	
65. Softening of the brain.....																		12	13
66. Paralysis, cause unspecified.....	3	1	2	2	1	2	1	4	1	1	6	11	18	28	45	43	70	117	
67. General paralysis.....																		5	7
68. Other forms of insanity.....																		14	12
69. Epilepsy.....	5	2	2		1	3	4	6	13	11	11	13	8	11	10	8	7	6	
70. Convulsions (not puerperal).....																			
71. Convulsions of infants.....	219	27	5	2	1	4	2	2	1	1	2	2	2	1	2	1	3		1
72. Tetanus.....	18	1	1	1	1	4	14	4	5	4	2	2	2	1	2	1	1		
73. Chorea.....	1		1																
74. Other nervous diseases.....	10	2	4	1	1	5	4	4	7	1	3	5	10	10	11	7	11	8	
75. Diseases of the eye.....																			
76. Diseases of the ear.....	5	2			1	1	2	2										1	
<b>III. DISEASES OF THE CIRCULATORY SYSTEM.</b>																			
77. Pericarditis.....	2				1	1	1	1	1	1	2	5	2	4	6	4	6	7	
78. Acute endocarditis.....	1			1	1	2	3	5	6	5	4	5	4	4	11	9	11	9	
79. Organic diseases of the heart.....	31	2	4	2	1	20	33	39	46	28	45	64	66	107	141	175	262	320	
80. Angina pectoris.....																		34	
81. Diseases of the arteries, atheroma, aneurism, etc.....																		29	
82. Embolism and thrombosis.....	1	1			1			2		3	3	3	3	3	5	6	5	6	
83. Diseases of the veins (varices, hemorrhoids, phlebitis).....																			
84. Diseases of the lymphatics, lymphangitis, etc.....	1																	3	
85. Hemorrhage.....	12			1		2	2	1	4	4	1	3	1	1	1	1	2	3	4
86. Other diseases of the circulatory system.....																			

TABLE No. 2—Continued.

IV. DISEASES OF THE RESPIRATORY SYSTEM.																	
0	1	2	3	4	5 to 10.	10 15.	15 20.	20 25.	25 30.	30 35.	35 40.	40 45.	45 50.	50 55.	55 60.	60 65.	65 70.
87. Diseases of the nasal fossæ.....																	
1	6	4	4		1	1	1	1	1	1	1	1	1	1	1	1	1
7					9	1	1	1	1	1	1	1	1	1	1	1	1
88. Diseases of the larynx.....																	
109	28	3	3	3	2	1	3	2	2	2	3	2	2	2	3	5	8
89. Diseases of the thyroid body.....																	
109	28	3	3	3	2	1	3	2	2	2	3	2	2	2	3	5	8
90. Acute bronchitis.....																	
1					1	1	1	1	1	1	1	1	1	1	1	1	1
91. Chronic bronchitis.....																	
224	74	35	10	13	29	6	4	3	3	6	6	9	8	7	8	10	23
410	173	90	56	31	56	42	83	72	77	73	92	91	94	113	119	133	161
92. Broncho-pneumonia.....																	
2	1	2		1	4	2	4	4	4	2	6	4	4	6	1	6	6
80	15	2	1	2	6	2	8	2	9	7	6	6	10	10	10	12	32
93. Pneumonia.....																	
94. Pleurisy.....																	
95. Congestion and apoplexy of the lungs.....																	
96. Gangrene of the lungs.....																	
2					1		1			1	5	2	3	6	10	20	16
97. Asthma.....																	
98. Pulmonary emphysema.....																	
99. Other diseases of the respiratory system (gophthisis excepted).....																	
8	2	1			2	1	6	1	4	6	5	4	5	8	4	14	14
V. DISEASES OF THE DIGESTIVE SYSTEM.																	
100. Diseases of the mouth and adnexa.....																	
16	1		1	1	1	7	2	2	1		1		1		1	1	1
7	1	2	1	1	1	7	7	2	1		1		1		1	1	1
101. Diseases of the pharynx.....																	
102. Diseases of the œsophagus.....																	
1						3	4	4	4	4	2	5	8	5	7	4	8
103. Ulcer of the stomach.....																	
159	23	11	3	5	8	7	11	4	19	14	15	11	17	29	32	47	44
104. Other diseases of the stomach (cancer excepted).....																	
105. Diarrhoea and enteritis (under 5 years of age).....																	
1,240	416	116	30	20	1			2	4	1	1	1	1	1	6	16	24
106. Chronic diarrhoea.....																	
105					11	6	8	10	11	3	10	11	8	16	23	25	34
107. Diarrhoea and enteritis (5 years and over).....																	
1																	
108. Intestinal parasites.....																	
28	12	9	3	7	8	4	12	3	8	5	7	14	12	17	17	20	28
Hæmorrhoids and intestinal obstructions.....																	
Other diseases of the intestines.....																	
28	4		5	1	4	2	5	7	2	6	5	2	5	3	6	6	12
109. Acute yellow atrophy of the liver.....																	
110. Hydatid tumors of the liver.....																	
111. Hydrated tumors of the liver.....																	
112. Cirrhosis of the liver.....																	
1					2	3	2	4	2	6	10	20	25	34	30	27	31
1					1			1	2	1	4	5	9	9	12	9	12
113. Biliary calculi.....																	

114.	Other diseases of the liver.....	13	1	3	1	1	9	5	9	12	14	9	15	17	14	34	28
115.	Diseases of the spleen.....	17	3	1	4	2	11	11	18	26	33	15	14	20	7	18	11
116.	Simple peritonitis (not puerperal).....	1	1	2	2	13	24	20	14	17	15	11	11	9	2	7	4
117.	Other diseases of the digestive system.....	18	11	8	5	4	10	6	6	11	18	12	10	13	14	16	20
118.	Appendicitis and abscess of the iliac fossa.....	13	4	2	2	18	8	24	34	36	30	46	90	97	137	171	192
119.	Acute nephritis.....	7	2	1	1	1	1	1	1	1	1	3	3	1	2	4	5
120.	Right's disease.....	2	1	1	1	1	1	1	2	2	2	1	1	2	2	7	12
121.	Other diseases of the kidneys and their adnexa.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
122.	Calculi of the urinary tract.....	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
123.	Diseases of the bladder.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
124.	Diseases of the urethra.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
125.	Diseases of the prostate.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
126.	Diseases of the male genital organs.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
127.	Metritis.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
128.	Uterine hemorrhage (non-puerperal).....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
129.	Uterine tumor.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
130.	Other diseases of the uterus.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
131.	Cysts and other ovarian tumors.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
132.	Other diseases of the female genital organs.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
133.	Non-puerperal diseases of the breast.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

## VII. PUERPERAL DISEASES.

134.	Accidents of pregnancy.....	6	9	13	4	7	4	1	1	1	1	1	1	1	1	1	1
135.	Puerperal hemorrhage.....	4	5	3	5	3	2	1	1	1	1	1	1	1	1	1	1
136.	Other accidents of labor.....	20	31	33	24	26	8	2	2	2	2	2	2	2	2	2	2
137.	Puerperal septicæmia.....	1	11	13	9	11	3	1	1	1	1	1	1	1	1	1	1
138.	Albuminuria and puerperal eclampsia.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
139.	Phlegmasia alba dolens, puerperal.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
140.	Other puerperal accidents.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
141.	Puerperal diseases of the breast.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

## VIII. DISEASES OF THE SKIN AND CELLULAR TISSUES.

142.	Gangrene.....	5	5	3	2	2	1	3	4	4	4	7	15	1	1	1	1
143.	Carbuncle.....	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
144.	Acute abscess, phlegmon.....	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
145.	Other diseases of the skin and adnexa.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

TABLE No. 2—Continued.

	0	1	2	3	4	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.
<b>IX. DISEASES OF THE LOCOMOTOR SYSTEM.</b>																		
146. Affections of the bones.....	6	3	3	1		3	3	2	3	1	3	1	2	1	2	1	1	1
147. Arthritis and other diseases of the joints.....											1							
148. Amputation.....																		
149. Other diseases of the organs of locomotion.....																		
<b>X. MALFORMATIONS.</b>																		
150. Malformations.....	274	4	4			2												
<b>XI. DISEASES OF INFANCY</b>																		
151. Congenital debility, icterus.....	1,143																	
152. Other diseases of early infancy.....	73																	
153. Lack of care.....	549	1																
<b>XII. DISEASES OF OLD AGE.</b>																		
154. Senile debility.....																1	12	41
<b>XIII. EXTERNAL CAUSES.</b>																		
<b>A.—Suicides.</b>																		
155. Suicide by poison.....						1	13	23	1	20	15	10	10	10	5	11	6	7
156. Asphyxia.....											4	2	3	7	8	6	4	5
157. Hanging or strangulation.....										2	2	3	1	1	1	1	2	3
158. Drowning.....										13	11	7	8	6	8	6	2	3
159. Firearms.....																		
160. Cutting instruments.....											2	1	4	1	2		2	
161. Jumping from high places.....										1								
162. Crushing.....																		
163. Other Suicides.....							1	2	1	1	1	1	2	2	3	1		3





TABLE No. 2—Continued.

*Deaths from all Causes by Months, Ages, Color, Nationality and Condition, for the Year Ending December 31, 1906. International Classification.*

	70 to 75.	75 to 80.	80 to 90.	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
I. GENERAL DISEASES. EPIDEMIC.															
1. Typhoid fever.....	10	15	8	5	886	27	880	45	8	499	366	39	9	913	
2. Exanthematic typhus.....															
3. Recurrent fever.....															
4. Intermittent and malarial fever.....	3	11	9	1	94	8	91	10	1	41	39	20	2	102	
5. Variola or smallpox.....					6	2	8			7	1			8	
6. Measles.....							23			21	2			23	
7. Scarlatina.....							101	99	1	93	8			101	
8. Whooping cough.....							144	13		155	2			157	
9. Croup.....							21	3		24				24	
9a. Diphtheria.....					1	2	373	4	1	373	5			378	
10. Influenza.....	31	31	43	8	2	212	12	189	22	3	55	80	83	6	224
11. Miliary fever.....															
12. Asiatic cholera.....															
13. Cholera nostras.....		2	3	1	1	18	17		1	4	8	6		18	
14. Dysentery.....	31	40	57	9		229	6	200	32	3	27	94	107	7	235
15. Bubonic plague.....															
16. Yellow fever.....															
17. Leprosy.....															
18. Erysipelas.....	8	7	9	1		85	1	76	8	2	37	35	14	86	
19. Other epidemic diseases.....						7		7		6	1			7	
20. Purulent septicaemia and infection.....															
21. Glanders and farcy.....	13	7	10	1	1	217	10	200	22	5	81	112	30	4	227
22. Malignant pustule and anthrax.....															
23. Rabies.....						5		5			3	2		5	
24. Actinomycosis, trichinosis, etc.....			1			2		1	1		1		1	2	

25. Pellagra.....	1	2				56	2	52	5	1	17	34	7	58
26. Tuberculosis of the larynx.....	102	74	31	4	23	3,530	266	3,515	244	37	1,413	1,996	452	3,796
27. Tuberculosis of the lungs.....						172	13	184	1		167	12	6	185
28. Tuberculosis of the meninges.....	10	9	3			219	15	222	8	4	99	102	29	234
29. Abdominal tuberculosis.....														
30. Pott's disease.....						18	1	19			13	5	1	19
31. Cold abscess.....	1		1			3			1				3	3
32. White swelling.....						15	2	17				7		17
33. Tuberculosis of other organs.....	7	1				62	5	60	6	1	23	27	14	67
34. General tuberculosis.....	1	1				71	6	75	2		43	25	8	77
35. Scrofula.....						12		12	2	1	11	1		12
36. Syphilis.....						63	12	72			56	12	7	75
36a. Soft chancre.....						2								
37. Gonorrhea (5 years and over).....						1						1	1	2
38. Gonorrhea (under 5 years).....														1
39. Cancer and other tumors of the buccal cavity.....	6	11	11			56	1	46	11		4	35	18	57
40. Cancer and other tumors of the stomach and liver.....	84	52	28		2	496	8	397	102	5	40	313	147	504
41. Cancer and other tumors of the peritoneum, intestines and rectum.....	10	8	5	2		131	2	105	28		8	91	34	133
42. Cancer and other tumors of the female genital organs.....	10	8	3	1	1	207	6	191	21	1	14	134	64	213
43. Cancer and other tumors of the breast.....	9	7	6	2	2	115	3	107	11		12	73	33	118
44. Cancer and other tumors of the skin.....	18	15	16	3	1	91		69	22		9	47	33	91
45. Cancer and other tumors of other organs.....	38	29	26	2	2	297	4	258	41	2	44	178	77	301
46. Other tumors.....	1	7	2			37	2	33	6		7	17	15	39
47. Acute articular rheumatism.....	12	8	6	2		141	4	137	6	2	63	57	25	145
48. Chronic rheumatism and gout.....	23	11	9	2		122	7	106	21	2	23	79	27	129
49. Scoury.....	1	1				5		5				3		5
50. Diabetes.....	29	20	10			268	3	223	44	2	49	164	54	299
51. Exophthalmic goitre.....		1				21	1	21			2	16	2	22
52. Addison's disease.....	1	1				11		8	3			8	1	11
53. Leucæmia.....	3					23		20	3			9	5	23
54. Anæmia, chlorosis.....														
55. Other general diseases.....	5	3	4			93		84	8	1	27	51	13	93
56. Alcoholism, acute and chronic.....	3	4	2		1	33		30	2		1	12	8	33
57. Chronic lead poisoning.....	6	2			1	93	3	74	15	7	35	39	10	68
58. Other chronic poisonings (occupational).....						2		2				1	1	2
59. Other chronic poisonings.....		2				1	1	1	1				6	1
						12	1	12	1		3	4		13

TABLE No. 2—Continued.

	0	1	2	3	4	5	10	15	20	25	30	35	40	45	50	55	60	65	70
25. Pellagra.....	1																		
26. Tuberculosis of the larynx.....	50	27	19	10	8	31	76	353	619	526	423	337	277	227	194	151	143	144	
27. Tuberculosis of the lungs.....	46	29	15	10	12	26	10	10	5	4	3	4	12	1	1	1	1	1	
28. Tuberculosis of the meninges.....	13	2	1	1	4	1	7	23	27	21	13	13	11	14	17	10	14	11	
29. Abdominal tuberculosis.....																			
30. Pott's disease.....	1			1		1	1	6	1	2	3			1			2		
31. Cold abscess.....																			
32. White swelling.....						2	4	2		1	1		1	1		3	2		1
33. Tuberculosis of other organs.....	2			3		1	4	4	8	6	2	9	3	7	2	1	5	2	
34. General tuberculosis.....	3	4	3			2	4	7	15	8	5	7	5	5	3	1	2	1	
35. Scrofula.....	7			1				1					1						
36. Syphilis.....	34	2				1		1	6	9	8	1	1	3	4		3	2	
36a. Soft chancre.....										1	1								
37. Gonorrhea (5 years and over).....																			
38. Gonorrhea (under 5 years).....	1																		
39. Cancer and other tumors of the buccal cavity.....									1	1	1	1							
40. Cancer and other tumors of the stomach and liver.....					1		1	2	1	3	13	25	36	56	55	65	80		
41. Cancer and other tumors of the peritoneum, intestines and rectum.....								1		5	9	10	14	14	13	22	20		
42. Cancer and other tumors of the female genital organs.....							2	5	2	10	9	23	29	36	23	27	24		
43. Cancer and other tumors of the breast.....									1	8	11	17	17	12	12	16	7		
44. Cancer and other tumors of the skin.....						1	1	2	4	9	8	18	30	39	3	7	9		
45. Cancer and other tumors of other organs.....					1	1	2	2	4	2	1	2	2	2	3	7	40	25	
46. Other tumors.....				1		1	12	13	7	9	6	6	1	3	8	7	5		
47. Acute articular rheumatism.....	1			3	1	17	10	3	2	3	3	3	4	5	9	10	12	19	
48. Chronic rheumatism and gout.....																			
49. Scurvy.....	1			1		3	8	5	9	13	7	5	14	17	20	31	29	35	
50. Diabetes.....																			
51. Exophthalmic goitre.....																			
52. Addison's disease.....																			
53. Leukemia.....	1					1	3	2	1	1	1	2	1	1	3		3		



TABLE No. 2—Continued.

	0	1	2	3	4	5	10	15	20	25	30	35	40	45	50	55	60	65	70
<b>IV. DISEASES OF THE RESPIRATORY SYSTEM.</b>																			
87. Diseases of the nasal fossae.....	1	6	4	4		1	1	1		1						1	1		
88. Diseases of the larynx.....	7					9	1	1								3	5	8	
89. Diseases of the thyroid body.....						2	1	3	1	1	2	1	2	2	1	4	15	37	
90. Acute bronchitis.....	109	28	3	3	3	1		2	2	2		3			6				
91. Chronic bronchitis.....		1		1															
92. Broncho-pneumonia.....	224	74	35	10	13	29	6	4	3	6	6	6	9	8	7	8	10	23	
93. Pneumonia.....	410	173	90	56	31	56	42	83	72	77	73	92	91	94	113	119	133	161	
94. Pleurisy.....	2	1	2		1	4			4	4	4	2	6	4	4	6	1	1	6
95. Congestion and apoplexy of the lungs.....	80	15	2	1	2	6	2	8	2	9	7	6	6	10	10	10	12	32	
96. Gangrene of the lungs.....								1					2		1			2	
97. Asthma.....	2					1					1	5		3	6	10	20	16	
98. Pulmonary emphysema.....															1		2		
99. Other diseases of the respiratory system (tuberculosis excepted).....	8	2	1			2	1	6	1	4	6	5	4	5	8	4	14	14	
<b>V. DISEASES OF THE DIGESTIVE SYSTEM.</b>																			
100. Diseases of the mouth and adnexa.....	16	1		1	1	1	7	2	2	1		1					1	1	
101. Diseases of the pharynx.....	7	1	2	1	1									1				1	
102. Diseases of the esophagus.....			1					3	4	4	4	2	5	8	5	7	4	8	
103. Ulcer of the stomach.....	1					8	7	11	4	19	14	15	11	17	29	32	47	44	
104. Other diseases of the stomach (cancer excepted).....	159	23	11	3	5														
105. Diarrhoea and enteritis (under 5 years of age).....	1,240	416	116	30	20	1			2	4	1		1	1	1	6	16	24	
106. Chronic diarrhoea.....									10	11	3	10	11	8	16	23	25	34	
107. Diarrhoea and enteritis (5 years and over).....						11	6	8											
108. Intestinal parasites.....	1		2		1														
109. Hernia and intestinal obstructions.....	28	12	9	3	7	8	4	12	3	8	5	7	14	12	17	17	20	28	
110. Other diseases of the intestines.....																			
111. Acute yellow atrophy of the liver.....	28	4		5	1	4	2	5	7	2	6	5	2	5	3	6	6	12	
112. Hydatid tumors of the liver.....									1		1	1						1	
113. Cirrhosis of the liver.....	1																		
114. Biliary calculi.....	1				1	2	3	2	4	2	5	10	20	25	34	30	27	31	
									1	2	1	4	5	9	9	12	9	9	

114.	Other diseases of the liver.....	13	1	3	1	1	9	5	9	14	9	15	17	14	34	28
115.	Diseases of the spleen.....														1	8
116.	Simple peritonitis (not puerperal).....	17	3	1	4	2	11	18	26	33	15	17	13	7	18	11
117.	Other diseases of the digestive system.....															1
118.	Appendicitis and abscess of the iliac fossa.....	1			2	2	13	24	14	17	15	9	13	4	7	4
VI. DISEASES OF THE GENITO-URINARY SYSTEM.																
119.	Acute nephritis.....	18	11	8	5	4	10	4	6	6	11	12	10	13	14	20
120.	Bright's disease.....	13	4	2		2	18	8	24	34	36	53	99	137	171	192
121.	Other diseases of the kidneys and their adnexa.....	7					1			1	1	2	3	2	4	5
122.	Calculi of the urinary tract.....														1	1
123.	Diseases of the bladder.....	2			1	1				2		1	1	2	7	12
124.	Diseases of the urethra.....	1											3			
125.	Diseases of the prostate.....							1					1		6	7
126.	Diseases of the male genital organs.....													1		
127.	Metritis.....							1					2			
128.	Uterine hemorrhage (non-puerperal).....									3	1	1				
129.	Uterine tumor.....															
130.	Other diseases of the uterus.....								2	2	1	7	1	4	2	1
131.	Cystitis and other ovarian tumors.....												7		5	1
132.	Other diseases of the female genital organs.....									3	4		2	6	3	1
133.	Non-puerperal diseases of the breast.....												3	2		
VII. PUERPERAL DISEASES.																
134.	Accidents of pregnancy.....								6	9	13	4	1			
135.	Puerperal hemorrhage.....							4	5	3	5	2	1			
136.	Other accidents of labor.....									3	1	6				
137.	Puerperal septicemia.....							20	31	33	24	8	2			
138.	Albuminuria and puerperal eclampsia.....															
139.	Phlegmasia alba dolens, puerperal.....								1	11	13	9	1			
140.	Other puerperal accidents.....															
141.	Puerperal diseases of the breast.....								1	9	7	6	2			
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUES.																
142.	Gangrene.....	5							3		2	1	3	4	4	7
143.	Carbuncle.....										2	1	1	1	1	1
144.	Acute abscess, phlegmon.....	2		1			1	1					1	2	1	2
145.	Other diseases of the skin and adnexa.....	14	1												2	

TABLE No. 2—Continued.

	0	1	2	3	4	5 to 10.	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.
IX. DISEASES OF THE LOCOMOTOR SYSTEM.																		
146. Affections of the bones.....	6	3	3	1		3	3	2	3	1	3		2	1	2	2	1	1
147. Arthritis and other diseases of the joints.....											1					1		
148. Amputation.....											1							
149. Other diseases of the organs of locomotion.....																		
X. MALFORMATIONS.																		
150. Malformations.....	274	4	4			2												
XI. DISEASES OF INFANCY																		
151. Congenital debility, icterus.....	1,143																	
152. Other diseases of early infancy.....	73																	
153. Lack of care.....	549	1																
XII. DISEASES OF OLD AGE.																		
154. Senile debility.....																1	12	41
XIII. EXTERNAL CAUSES.																		
A.—Suicide.																		
155. Suicide by poison.....							1	13	23	20	15	10	10	10	5	11	6	7
156. Asphyxia.....								1	1	1	4	2	3	7	8	6	4	5
157. Hanging or strangulation.....									2	2	1	3	1	1	1	2	1	3
158. Drowning.....								4	8	13	11	7	8	6	8	6	2	3
159. Firearms.....																		
160. Cutting instruments.....										1	2	1	4	1	2		2	
161. Jumping from high places.....																		
162. Crushing.....																		
163. Other Suicides.....							1	2	1	1	1	1	2	2	3	1		3





TABLE No. 2—Continued.

*Deaths from all Causes by Months, Ages, Color, Nationality and Condition, for the Year Ending December 31, 1906. International Classification.*

	70 to 75	75 to 80	80 to 90	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
<b>I. GENERAL DISEASES. EPIDEMIC.</b>															
1. Typhoid fever.....	10	15	8		5	886	27	860	45	8	499	366	39	9	913
2. Exanthematous typhus.....															
3. Recurrent fever.....															
4. Intermittent and malarial fever.....	3	11	9	1		94	8	91	10	1	41	39	20	2	102
5. Variola or smallpox.....						6	2	8			7	1			8
6. Measles.....						23		23			21	2			23
7. Scarlatina.....						101		99	1	1	93	8			101
8. Whooping cough.....						144	13	157			155	2			157
9. Croup.....						21	3	24			24				24
9a. Diphtheria.....					1	376	2	373	4	1	373	5			378
10. Influenza.....	31	31	43	8	2	212	12	189	32	3	55	80	83	6	224
11. Military fever.....															
12. Asiatic cholera.....						18		17		1	4	8	6		18
13. Cholera nostras.....		2	3	1	1	229	6	200	32	3	27	94	107	7	235
14. Dysentery.....	31	40	57	9											
15. Bubonic plague.....															
16. Yellow fever.....															
17. Leprosy.....															
18. Erysipelas.....	8	7	9	1		85	1	76	8	2	37	35	14		86
19. Other epidemic diseases.....						7		7			6	1			7
20. Purulent septemia and infection.....															
21. Glanders and farcy.....															
22. Malignant pustule and anthrax.....	13	7	10	1	1	217	10	200	22	5	81	112	30	4	227
23. Rabies.....						5		5			3	2			5
24. Actinomycosis, trichinosis, etc.....			1			2		1	1		1		1		2

25. Pellagra.....	1	2				56	2	52	5	1	17	34	7	58
26. Tuberculosis of the larynx.....	102	74	31	4	23	3,530	266	3,515	244	37	1,413	1,896	452	3,790
27. Tuberculosis of the lungs.....						13	13	184	1		167	12	6	185
28. Tuberculosis of the meninges.....						219	15	222	8	4	99	102	29	284
29. Abdominal tuberculosis.....	10	9	3											
30. Pott's disease.....						18	1	19			13	5	1	19
31. Cold abscess.....	1		1			3	3	2	1				3	3
32. White swelling.....						15	2	17			9	7	1	17
33. Tuberculosis of other organs.....	7	1				62	5	60	6	1	23	27	14	67
34. General tuberculosis.....	1	1				71	6	75	2		43	25	8	77
35. Scrophula.....						12		12			11	1		12
36. Syphilis.....						63	12	72	2	1	56	12	7	75
36a. Soft chancre.....						2								
37. Gonorrhea (5 years and over).....						1		1				1	1	2
38. Gonorrhea (under 5 years).....														1
39. Cancer and other tumors of the buccal cavity.....	6	11	11			56	1	46	11		4	35	18	57
40. Cancer and other tumors of the stomach and liver.....	84	52	28		2	496	8	397	102	5	40	313	147	504
41. Cancer and other tumors of the peritoneum, intestines and rectum.....	10	8	5	2		131	2	105	28		8	91	34	133
42. Cancer and other tumors of the female genital organs.....	10	8	3	1	1	207	6	191	21	1	14	134	64	213
43. Cancer and other tumors of the breast.....	9	7	6	2	2	115	3	107	11		13	73	33	118
44. Cancer and other tumors of the skin.....	18	15	16	3	1	91		69	22		9	47	33	91
45. Cancer and other tumors of other organs.....	36	29	26	2	2	297	4	258	41	2	44	178	77	301
46. Other tumors.....	1	7	2			37		33	6		7	17	15	50
47. Acute articular rheumatism.....	12	8	6	2		141	4	137	6	2	62	57	25	145
48. Chronic rheumatism and gout.....	23	11	9	2		122	7	106	21	2	23	79	27	129
49. Scurvy.....	1	1				5		5			2	3		5
50. Diabetes.....	29	20	10			266	3	223	44	2	49	164	54	269
51. Exophthalmic goitre.....		1				21	1	21			2	18	2	22
52. Addison's disease.....		1				11		8	3		2	8		11
53. Leukemia.....	3					23		20	3		9	9	5	23
54. Anemia, chlorosis.....	5	3	4			93		84	8	1	27	51	13	93
55. Other general diseases.....	3	4	2		1	33		20	12	1	13	12	8	33
56. Alcoholism, acute and chronic.....	6	2		1		93	3	74	15	7	35	39	10	96
57. Chronic lead poisoning.....						2		2				1	1	2
58. Other chronic poisonings (occupational).....						1		1				1		1
59. Other chronic poisonings.....		2				12	1	12	1		3	4	6	13

TABLE No. 2—Continued.

II. DISEASES OF THE NERVOUS SYSTEM AND ORGANS OF SENSE.															
	70 to 75.	75 to 80.	80 to 90.	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total
60. Encephalitis.....						77	1	78							
61. Simple meningitis.....	3	2	1			224	16	237	3		68	9	1		78
61a. Epidemic cerebro-spinal meningitis.....	5	2	2			470	11	471	10		180	49	8	3	240
62. Progressive locomotor ataxia.....	5	3	2	1	4	58		48	10		413	59	8	1	481
63. Other diseases of the spinal cord.....	16	16	12		1	134	2	128	8		48	55	32	1	136
64. Congestion and hemorrhage of the brain.....	213	177	186	22	8	1,457	39	1,244	238	14	256	730	494	16	1,496
65. Softening of the brain.....	12	25	21	1	2	99	3	86	13	3	9	48	43	2	102
66. Paralysis, cause unspecified.....	133	126	153	10	3	765	12	657	108	12	64	372	329	12	777
67. General paralysis.....	8	5	8	1	2	85	2	71	14	2	12	46	27	2	87
68. Other forms of insanity.....	1	5	5	1		79	2	71	8	2	9	47	21	4	81
69. Epilepsy.....	6	1	1		2	130		121	7	2	76	31	15	8	130
70. Convulsions (not puerperal).....						13	1	14			7	6		1	14
71. Convulsions of infants.....						243	11	254			254				254
72. Tetanus.....		1				59	5	60	3	1	48	14	1	1	64
73. Chorea.....						6	1	7			7				7
74. Other nervous diseases.....	14	12	5			131	3	126	6	2	41	62	28	3	134
75. Diseases of the eye.....						1		1				1			1
76. Diseases of the ear.....						16		15	1		13	2	1		16
III. DISEASES OF THE CIRCULATORY SYSTEM.															
77. Pericarditis.....	4	7	4			55	3	48	10		12	30	15	1	58
78. Acute endocarditis.....	5	9	8			97	8	87	16		21	59	23	2	105
79. Organic diseases of the heart.....	301	252	246	11	12	2,120	88	1,821	355	32	327	1,150	703	28	2,208
80. Angina pectoris.....	41	25	23			236	7	191	45	7	23	146	70	4	243
81. Diseases of the arteries, atheroma, aneurism, etc.....	37	44	55	7	1	231	8	182	53	4	18	105	112	4	239
82. Embolism and thrombosis.....	8	4	7	1		58	1	54	4	1	10	36	11	2	59
83. Diseases of the veins (varices, hemorrhoids, phlebitis).....	1					11	1	11	1			10	2		12
84. Diseases of the lymphatics, lymphangitis, etc.....						4		3	1		1	3		3	4
85. Hemorrhage.....						46	1	43	3	1	15	22	9	1	47
86. Other diseases of the circulatory system.....	2	1	1	1		1		1			1				4

## IV. DISEASES OF THE RESPIRATORY SYSTEM.

87. Diseases of the nasal fossae.....	1	1	4	4	3	3	1	4
88. Diseases of the larynx.....	2	1	30	6	6	2	1	30
89. Diseases of the thyroid body.....	16	41	230	26	230	51	1	263
90. Acute bronchitis.....	42	42	187	8	132	38	5	193
91. Chronic bronchitis.....	36	26	538	38	531	41	4	576
92. Broncho-pneumonia.....	165	168	2,331	147	2,200	257	21	2,478
93. Pneumonia.....	12	8	72	2	41	12	1	74
94. Pleurisy.....	25	45	330	8	293	44	1	338
95. Congestion and apoplexy of the lungs.....	3	3	0	1	9	1	1	10
96. Gangrene of the lungs.....	14	15	99	6	76	28	1	105
97. Asthma.....	2	2	5	3	3	1	1	5
98. Pulmonary emphysema.....	10	5	99	8	95	11	1	107
99. Other diseases of the respiratory system (phthisis excepted).....								

## V. DISEASES OF THE DIGESTIVE SYSTEM.

100. Diseases of the mouth and adnexa.....	1	3	22	1	23	1	2	24
101. Diseases of the pharynx.....	2	3	42	5	39	1	2	42
102. Diseases of the esophagus.....	1	1	5	1	3	2	3	6
103. Ulcer of the stomach.....	6	3	67	2	64	5	1	69
104. Other diseases of the stomach (cancer excepted).....	62	50	611	19	560	64	6	630
105. Diarrhoea and enteritis (under 5 years of age).....			1,765	58	1,821	1	1	1,823
105a. Chronic diarrhoea.....	25	18	115	2	106	7	3	115
106. Diarrhoea and enteritis (5 years and over).....	43	47	312	15	257	61	9	327
107. Intestinal parasites.....			4	4	4	4	4	4
108. Hernia and intestinal obstructions.....	27	22	296	9	252	43	102	295
109. Other diseases of the intestines.....	11	8	136	4	128	11	1	140
110. Acute yellow atrophy of the liver.....			4	4	4		4	4
111. Hydatid tumors of the liver.....	28	19	252	9	204	49	8	261
112. Cirrhosis of the liver.....	5	5	71	3	64	9	1	74
113. Biliary calculi.....			245	7	219	31	2	252
114. Other diseases of the liver.....	21	22	245	7	219	31	2	252
115. Diseases of the spleen.....	7	11	247	18	246	17	2	265
116. Simple peritonitis (not puerperal).....			4	4	3	1	1	4
117. Other diseases of the digestive system.....	3	2	171	3	162	12	93	174
118. Appendicitis and abscess of the iliac fossae.....								
VI. DISEASES OF THE GENITO-URINARY SYSTEM.								
119. Acute nephritis.....	13	10	209	21	202	26	2	230
120. Bright's disease.....	207	185	1,499	50	1,282	247	20	1,549
121. Other diseases of the kidneys and their adnexa.....	11	6	53	2	51	4	1	55
122. Calculi of the urinary tract.....	2	1	7	1	7	1	1	8
123. Diseases of the bladder.....	18	25	100	2	86	15	1	102

TABLE No. 2—Continued.

	70 to 75	75 to 80	80 to 90	90 and over	Unknown	White	Colored	American	Foreign	Not Reported	Single	Married	Widowed	Not Reported	Total
124. Diseases of the urethra.....			2			5	1	5	1		1	3	2		6
125. Diseases of the prostate.....	12	21	8			55	2	47	10		1	88	18		57
126. Diseases of the male genital organs.....															
127. Metritis.....						4		4			1	3			4
128. Uterine hemorrhage (non-puerperal).....						7		7				7			7
129. Uterine tumor.....	3	1	1			25	4	26	3		2	21	6		29
130. Other diseases of the uterus.....						31	1	30	2		3	28	1		32
131. Cysts and other ovarian tumors.....		3	1			19		16	3		2	9	8		19
132. Other diseases of the female genital organs.....	2	1				18	2	17	3			18	2		20
133. Non-puerperal diseases of the breast.....		1				1		1					1		1
VII. PUERPERAL DISEASES.															
134. Accidents of pregnancy.....						39	5	42	2		2	41	1		44
135. Puerperal hemorrhage.....						23		20	3		1	22			23
136. Other accidents of labor.....						14		11	3			14			14
137. Puerperal septicaemia.....					1	137	8	140	4	1	8	133	4		145
138. Albuminuria and puerperal eclampsia.....					1	59	2	59	2		5	56			61
139. Phlegmasia alba dolens, puerperal.....						1		1			1				1
140. Other puerperal accidents.....						27	4	29	1	1		30	1		31
141. Puerperal diseases of the breast.....															
VIII. DISEASES OF THE SKIN AND CELLULAR TISSUES.															
142. Gangrene.....	15	20	27	5		111	2	86	24	3	13	48	50	2	111
143. Carbuncle.....		1	2	1	1	14		14			3	7	4		14
144. Acute abscess, phlegmon.....	2		2		1	20	2	20	2		9	11	2		22
145. Other diseases of the skin and adnexa.....		2				20	1	20	1		16	3	2		21
IX. DISEASES OF THE LOCOMOTOR SYSTEM															
146. Affections of the bones.....					1	37	2	35	4		28	10	1		39
147. Arthritis and other diseases of the joints.....		1				2	1	3			2				3
148. Amputation.....						1		1				1			1
149. Other diseases of the organs of locomotion.....															



TABLE No. 2—Continued.

	70 to 75.	75 to 80.	80 to 90.	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
<i>C.—Homicides.</i>															
176a. Homicide.....		1	1		6	77	16	67	20	6	29	50	7	7	93
176b. Mob violence.....															
<i>XIV. CAUSES IL-DEFINED.</i>															
177. Dropsy.....	7	20	25			99	7	91	14	1	18	54	34		106
178. Sudden death (not puerperal).....	1	1				4		3	1			3	1		4
179. Causes not specified or ill-defined.....	5	13	6			189	9	175	10	13	103	30	56	9	198
<i>XV. STILLBIRTHS.</i>															
180. Stillbirths.....						2,082	67	2,149			2,149				2,149
Grand total.....	2,375	2,280	2,570	360	180	34,564	1,428	32,117	3,438	437	16,199	12,719	6,654	420	35,992

TABLE No. 2A.

*Re-apitulation of Table No 2—Classified Deaths by Months, Ages, Color, Nationality and Conjugal Condition,  
Year 1906.*

	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
I. General diseases—Epidemic.....	790	726	853	842	765	617	687	796	812	874	832	760
II. Diseases of the nervous system and organs of sense.....	375	338	413	409	331	314	327	330	318	302	333	346
III. Diseases of the circulatory system.....	264	233	290	241	270	244	222	203	219	231	298	261
IV. Diseases of the respiratory system.....	585	503	647	479	295	160	126	120	138	250	386	510
V. Diseases of the digestive system.....	218	222	208	281	259	267	559	791	709	497	271	236
VI. Diseases of the genito-urinary system.....	179	174	186	177	170	163	180	172	149	172	201	196
VII. Puerperal diseases.....	26	43	28	37	31	23	26	20	24	31	21	19
VIII. Diseases of the skin and cellular tissues.....	15	18	20	20	15	8	8	11	13	11	17	14
IX. Diseases of the locomotor system.....	3	5	9	9	4	5	3	5	3	1	6	3
X. Malformations.....	15	25	23	24	30	25	19	16	26	27	21	33
XI. Diseases of infancy.....	148	155	171	157	121	135	136	147	166	149	122	149
XII. Diseases of old age.....	103	120	120	106	98	78	107	99	123	120	94	113
XIII. External Causes.....	171	153	153	151	166	192	284	219	243	229	213	222
XIV. Causes ill-defined.....	21	20	16	23	17	18	24	28	30	43	36	9
XV. Stillbirths.....	197	169	193	184	184	184	187	179	173	174	172	153
Total.....	3,110	2,924	3,321	3,142	2,765	2,429	2,845	3,136	3,146	3,101	3,049	3,024



TABLE No. 2A—Continued.

	0	1	2	3	4	5	10	15	20	25	30	35	40	45	50	55	60	65	70.
I. General diseases.—Epidemic. ....	423	197	138	126	127	337	286	619	883	761	647	577	451	519	546	436	512	519	
II. Diseases of the nervous system and organs of sense. ....	608	168	75	41	37	88	69	77	77	55	76	97	131	177	217	232	304	380	
III. Diseases of the circulatory system. ....	48	3	6	4	4	25	39	50	61	52	67	96	88	138	188	243	343	413	
IV. Diseases of the respiratory system. ....	843	300	137	75	50	112	53	108	96	101	97	123	119	128	159	163	213	300	
V. Diseases of the digestive system. ....	1,513	461	145	49	42	69	66	90	83	112	83	96	111	130	157	160	215	241	
VI. Diseases of the genito-urinary system. ....	41	15	10	6	7	29	13	32	47	54	65	80	87	132	128	160	214	241	
VII. Puerperal diseases. ....	21	1	1	1	1	1	1	42	68	70	54	58	19	5	6	6	11	18	
VIII. Diseases of the skin and cellular tissues. ....	6	3	3	1	1	3	3	3	3	2	2	4	2	7	2	3	1	1	
IX. Diseases of the locomotor system. ....	274	4	4			2				3	1	4	1	1					
X. Malformations. ....																			
XI. Diseases of infancy. ....	1,765	1																	
XII. Diseases of old age. ....																			
XIII. External causes. ....	232	68	62	35	18	85	106	148	204	172	139	164	130	110	116	105	91	87	41
XIV. Causes ill-defined. ....	81	36	2			7	9	6	5	3	8	5	17	2	2	17	10	20	
XV. Stillbirths. ....	2,149																		
Total. ....	8,004	1,257	583	337	286	758	649	1,177	1,517	1,383	1,242	1,203	1,158	1,349	1,521	1,528	1,926	2,261	

TABLE No. 2A—Continued.

	70 to 75.	75 <sup>+</sup> to 80.	80 to 90.	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
I. General diseases—Epidemic.	475	300	303	30	43	8,903	451	8,492	770	92	3,644	4,211	1,409	91	9,384
II. Diseases of the nervous system and organs of sense.	416	375	367	36	23	4,047	109	3,938	429	88	1,512	1,571	1,019	54	4,156
III. Diseases of the circulatory system.	349	342	344	20	13	2,859	117	2,741	468	47	1,325	1,561	1,045	42	2,976
IV. Diseases of the respiratory system.	335	331	326	38	12	2,858	244	2,614	468	37	1,937	1,965	877	43	4,212
V. Diseases of the digestive system.	241	212	201	25	16	4,369	140	4,167	316	35	2,068	1,191	599	30	4,518
VI. Diseases of the genito-urinary system.	268	254	211	15	10	2,063	86	1,971	315	23	330	1,205	586	18	2,119
VII. Puerperal diseases.					2	300	19	302	15	2	16	287	6		319
VIII. Diseases of the skin and cellular tissues.	17	23	31	6	2	165	5	140	27	3	41	69	56	3	170
IX. Diseases of the locomotor system.	1	1			1	40	3	39	4		30	12	1		43
X. Malformations.						279	5	283		1	284				284
XI. Diseases of infancy.						1,710	56	1,766			1,766				1,766
XII. Diseases of old age.	148	261	647	165	5	1,250	80	1,222	338	20	72	357	820	31	1,280
XIII. External causes.	71	57	79	16	53	2,377	71	1,960	243	125	1,171	813	264	100	2,946
XIV. Causes ill-defined.	13	34	31			282	16	269	25	14	121	87	91	9	308
XV. Stillbirths.						2,062	67	2,149			2,149				2,149
Total.	2,375	2,280	2,570	360	180	34,564	1,428	32,117	3,438	437	16,199	12,719	6,654	420	35,992

TABLE No. 3.

Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, 1906.

COUNTIES.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Adams.....	Total.....	16	22	33	21	15	17	21	17	25	24	26	24
	Male.....	11	9	17	7	5	5	9	8	16	10	15	12
	Female.....	5	13	16	14	10	8	7	9	9	14	11	12
Allen.....	Total.....	86	97	96	122	103	96	77	95	96	76	100	99
	Male.....	39	48	61	63	49	50	48	47	47	34	51	52
	Female.....	47	49	35	59	54	46	29	48	49	42	49	47
Bartholomew.....	Total.....	34	29	35	33	27	26	28	28	30	29	34	31
	Male.....	18	17	18	15	15	17	18	18	20	23	22	18
	Female.....	16	12	17	18	12	9	12	12	10	6	12	13
Benton.....	Total.....	15	13	18	10	7	11	11	17	9	2	14	6
	Male.....	11	8	8	5	5	7	3	7	5	1	6	3
	Female.....	4	5	10	5	2	4	8	10	4	1	8	3
Blackford.....	Total.....	8	15	11	15	15	14	14	17	13	9	13	10
	Male.....	4	9	8	10	7	9	8	8	9	4	9	8
	Female.....	4	6	3	5	8	5	6	9	4	5	4	2
Boone.....	Total.....	26	26	31	25	33	33	25	27	19	24	24	28
	Male.....	14	17	16	12	12	17	11	14	8	12	13	11
	Female.....	12	9	15	13	21	16	14	13	11	12	11	17
Brown.....	Total.....	11	18	7	7	10	7	9	10	8	14	6	7
	Male.....	10	9	2	7	5	5	7	6	2	7	4	5
	Female.....	1	9	5	.....	5	2	2	4	6	7	2	2
Carroll.....	Total.....	10	21	25	28	29	12	22	20	29	19	14	21
	Male.....	3	17	13	16	15	8	10	8	17	10	7	11
	Female.....	7	4	12	12	14	4	12	12	12	9	7	10

Cass.....	Total.....	53	50	27	38	33	40	39	50	58	52	44
	Male.....	25	22	15	14	19	23	20	20	35	36	20
	Female.....	28	28	12	24	14	17	19	30	23	16	24
Clark.....	Total.....	32	25	37	26	25	38	18	35	42	55	30
	Male.....	13	10	22	18	12	13	23	22	21	31	20
	Female.....	19	15	15	8	13	23	15	13	21	24	10
Clay.....	Total.....	31	34	41	28	28	40	30	28	29	33	25
	Male.....	18	21	21	14	16	19	21	17	13	14	15
	Female.....	13	13	20	14	12	21	18	11	16	19	10
Clinton.....	Total.....	25	27	36	28	24	23	35	41	27	26	36
	Male.....	2	13	18	13	12	7	17	27	13	13	17
	Female.....	23	14	18	15	12	16	18	14	14	13	19
Crawford.....	Total.....	10	15	18	8	11	10	8	14	7	9	21
	Male.....	5	6	6	6	7	4	2	2	6	5	12
	Female.....	5	9	12	2	4	6	6	12	1	4	9
Davies.....	Total.....	35	34	31	28	22	31	28	28	39	38	27
	Male.....	18	15	14	14	8	16	18	10	21	13	13
	Female.....	17	19	17	13	14	15	10	16	18	25	14
Dearborn.....	Total.....	25	27	32	33	16	24	27	23	22	28	28
	Male.....	13	16	11	14	7	16	14	12	10	14	18
	Female.....	12	11	14	14	9	8	13	11	12	14	10
Devatur.....	Total.....	38	16	29	21	30	30	26	19	30	25	18
	Male.....	21	8	18	12	17	15	14	7	13	16	9
	Female.....	17	8	11	9	13	15	12	12	17	9	9
Detailb.....	Total.....	17	16	31	26	22	22	31	20	29	24	31
	Male.....	6	6	13	13	13	15	21	11	22	13	18
	Female.....	11	10	12	13	9	7	10	9	7	11	13
Delaware.....	Total.....	55	58	64	49	45	50	51	65	40	48	62
	Male.....	28	26	32	25	24	29	35	36	15	24	27
	Female.....	27	32	32	24	23	21	16	29	25	24	35
Dubois.....	Total.....	21	18	15	18	13	20	21	33	26	20	21
	Male.....	9	9	4	7	7	10	9	20	9	9	12
	Female.....	12	9	3	11	6	10	12	13	17	11	9
Elkhart.....	Total.....	66	46	60	67	47	34	53	58	54	58	49
	Male.....	31	27	31	31	23	19	32	33	33	30	26
	Female.....	35	19	29	36	24	15	21	26	21	28	23

TABLE No. 3—Continued.

COUNTIES	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Fayette.....	Total.....	12	22	21	27	11	11	12	16	17	10	15	14
	Male.....	5	9	12	14	4	6	6	6	6	6	8	5
	Female.....	7	13	9	13	7	5	6	4	11	4	7	9
Floyd.....	Total.....	49	30	42	36	31	37	37	30	26	46	37	37
	Male.....	23	12	24	15	21	18	21	16	10	27	17	17
	Female.....	26	18	18	21	10	19	16	14	16	19	19	20
Fountain.....	Total.....	20	25	23	21	19	20	23	20	24	26	24	24
	Male.....	10	7	12	13	7	11	11	9	10	10	10	13
	Female.....	10	18	11	8	12	9	12	11	14	16	14	11
Franklin.....	Total.....	16	19	16	21	18	14	21	14	11	16	22	15
	Male.....	7	5	8	13	7	9	14	4	6	9	14	7
	Female.....	9	14	8	8	11	5	7	10	5	7	8	8
Fulton.....	Total.....	16	22	21	21	20	17	13	9	14	20	16	15
	Male.....	8	11	9	13	7	8	8	2	9	9	8	8
	Female.....	8	11	12	8	13	9	5	7	5	11	8	7
Gibson.....	Total.....	43	47	40	23	27	23	27	36	36	23	42	31
	Male.....	26	29	18	12	17	11	17	18	23	23	23	19
	Female.....	17	18	22	11	10	12	10	18	13	14	19	12
Grant.....	Total.....	67	53	77	60	71	48	68	96	74	90	68	70
	Male.....	35	35	50	33	45	29	41	60	52	45	31	44
	Female.....	32	18	27	27	26	19	27	36	22	35	37	26
Greene.....	Total.....	45	52	45	28	33	26	43	32	48	55	41	42
	Male.....	32	30	24	17	21	14	21	21	28	31	20	22
	Female.....	13	22	21	11	12	12	22	11	20	24	21	20
Hamilton.....	Total.....	21	29	38	37	24	22	24	32	20	31	24	34
	Male.....	15	16	19	24	11	12	10	24	14	16	11	16
	Female.....	6	13	19	13	13	10	14	17	6	15	13	18

Hancock.....	Total.....	36	19	29	29	18	21	17	21	27	21	23	17
	Male.....	23	7	16	20	8	9	10	9	16	10	11	11
	Female.....	13	12	13	9	10	12	7	12	11	11	12	6
Harrison.....	Total.....	26	16	25	25	13	24	19	19	19	24	34	18
	Male.....	13	5	11	13	6	15	10	9	8	15	14	12
	Female.....	13	11	14	12	7	9	9	14	11	9	20	6
Hendricks.....	Total.....	29	30	23	23	26	16	22	23	29	22	16	16
	Male.....	10	16	11	16	19	9	15	12	25	15	5	7
	Female.....	19	14	12	7	7	7	7	11	14	16	11	9
Henry.....	Total.....	30	23	31	37	22	19	27	38	25	27	17	31
	Male.....	22	11	16	17	14	9	13	12	10	12	8	19
	Female.....	17	12	15	20	8	10	14	26	15	15	9	12
Howard.....	Total.....	24	30	42	49	29	28	28	33	48	35	42	27
	Male.....	12	14	22	26	14	19	14	17	25	15	22	11
	Female.....	12	16	20	23	15	9	14	16	23	20	20	16
Huntington.....	Total.....	22	29	28	27	36	18	21	25	43	36	27	28
	Male.....	11	13	17	10	22	11	10	10	25	15	16	14
	Female.....	11	14	11	17	14	7	11	12	18	20	11	14
Jackson.....	Total.....	37	39	38	29	23	14	40	26	44	37	36	36
	Male.....	20	19	26	14	14	10	17	13	19	19	20	24
	Female.....	17	20	12	15	9	4	23	13	25	18	16	12
Jasper.....	Total.....	9	13	9	11	7	5	10	12	18	19	12	10
	Male.....	5	9	6	8	2	5	2	9	13	11	5	7
	Female.....	4	4	3	3	5	5	8	3	5	8	7	3
Jay.....	Total.....	28	24	30	35	36	21	29	26	24	26	33	23
	Male.....	17	11	17	19	18	11	16	14	10	16	16	13
	Female.....	11	13	13	16	18	10	13	22	14	10	17	10
.....	Total.....	47	28	33	28	32	26	34	41	26	35	36	32
	Male.....	27	11	17	18	16	11	14	18	15	19	22	22
	Female.....	20	17	16	10	16	15	20	23	11	16	14	10
.....	Total.....	18	20	17	23	19	17	15	15	15	17	14	19
	Male.....	7	12	9	12	12	7	10	10	5	6	5	8
	Female.....	11	8	8	11	7	10	5	6	10	11	9	11
.....	Total.....	33	17	16	20	20	17	28	29	22	18	18	23
	Male.....	17	8	3	16	10	6	15	15	13	11	8	15
	Female.....	16	9	13	14	10	11	13	14	9	7	10	8

TABLE No. 3—Continued.

COUNTIES.	SEX.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Knox...	Total	53	51	52	36	32	24	56	47	51	46	36	41
	Male	28	23	21	25	12	12	29	26	23	29	13	21
	Female	25	28	31	11	20	12	27	21	28	17	23	20
Kosciusko	Total	27	29	31	42	22	21	22	28	29	26	28	23
	Male	12	11	17	22	15	14	12	15	15	11	12	11
	Female	15	18	14	20	7	7	10	13	14	15	16	11
Lagrange	Total	20	24	17	12	17	12	9	11	14	21	17	27
	Male	10	14	12	6	9	9	5	6	3	10	9	22
	Female	10	10	5	6	8	7	5	5	11	11	8	5
Lake	Total	72	54	75	58	51	55	60	73	65	73	56	74
	Male	41	36	42	35	23	29	34	43	36	47	36	43
	Female	31	18	33	23	28	26	26	30	29	26	20	31
Laporte	Total	40	48	49	46	53	37	34	42	37	49	52	57
	Male	18	24	21	27	26	20	25	26	24	33	32	27
	Female	22	24	28	19	27	17	9	16	13	16	20	30
Lawrence	Total	31	29	33	39	30	28	44	47	46	50	40	30
	Male	15	11	16	24	16	15	23	18	20	31	24	15
	Female	16	18	17	15	14	13	21	29	26	19	16	15
Madison	Total	79	67	63	65	71	54	77	77	100	95	57	69
	Male	39	31	27	30	37	31	47	38	42	46	33	30
	Female	40	36	36	26	34	23	30	39	58	49	24	39
Marion	Total	334	309	364	319	314	284	346	342	302	319	311	358
	Male	169	189	195	161	154	154	188	190	167	179	157	195
	Female	165	170	169	158	160	130	161	152	135	140	154	163
Marshall	Total	25	29	25	27	21	15	14	23	25	22	26	28
	Male	13	19	13	16	9	7	10	13	13	11	13	17
	Female	12	10	12	9	12	8	4	10	12	11	13	11

Martin	Total	16	18	17	17	10	8	13	11	18	12	17	9
	Male	10	9	7	9	6	4	4	5	9	5	10	2
	Female	6	9	10	8	4	4	6	6	9	7	7	7
Miami	Total	31	31	39	34	31	28	26	30	39	36	26	32
	Male	19	19	16	23	18	15	15	19	19	17	9	13
	Female	12	12	23	11	13	13	11	11	20	19	17	19
Monroe	Total	28	39	24	24	24	26	34	21	21	24	26	28
	Male	12	21	15	13	15	15	20	10	11	10	20	16
	Female	16	18	9	11	9	11	14	11	10	14	9	12
Montgomery	Total	38	31	39	42	21	21	29	27	43	31	41	32
	Male	22	15	19	20	12	12	14	18	26	12	20	11
	Female	16	16	20	22	9	9	15	9	17	19	21	21
Morgan	Total	25	22	36	21	25	13	19	23	31	26	24	25
	Male	16	10	20	11	17	6	13	12	14	12	14	13
	Female	9	12	16	10	8	7	6	11	17	14	10	12
Newton	Total	13	8	8	8	8	5	5	15	9	4	7	7
	Male	6	4	2	4	5	1	4	12	5	4	4	4
	Female	7	4	6	4	3	4	1	3	4	4	3	3
Noble	Total	33	26	17	27	21	20	17	22	31	23	21	18
	Male	16	12	10	11	9	13	9	10	15	7	13	8
	Female	17	14	7	16	12	7	8	12	16	16	8	10
Ohio	Total	5	5	5	8	5	4	9	5	3	2	5	7
	Male	3	3	3	5	4	1	5	2	2	1	2	4
	Female	2	2	2	3	1	3	4	3	1	1	3	3
Orange	Total	22	17	21	22	23	14	25	25	17	19	18	21
	Male	10	7	8	8	10	9	15	11	11	12	14	11
	Female	12	10	13	14	13	5	10	14	6	7	4	10
Owen	Total	17	17	12	11	7	5	6	16	10	18	23	13
	Male	6	9	7	6	2	3	5	11	4	10	6	6
	Female	11	8	5	5	5	2	1	5	6	8	13	7
Parke	Total	23	22	29	26	22	18	12	33	34	32	28	22
	Male	11	14	15	16	9	8	8	14	19	16	16	5
	Female	12	8	14	10	13	10	4	19	15	16	12	17
Perry	Total	19	20	18	30	16	21	20	20	24	25	16	20
	Male	10	7	10	19	7	10	10	11	10	6	6	6
	Female	9	13	8	11	9	11	10	9	14	19	10	14



TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Pike.....	Total.....	20	20	37	22	20	23	29	33	29	24	32	30
	Male.....	12	6	18	8	14	8	17	17	14	16	12	14
	Female.....	8	14	19	14	6	15	12	16	15	9	20	16
Porter.....	Total.....	17	14	25	20	16	18	15	19	20	22	40	21
	Male.....	8	8	16	11	8	8	11	12	14	12	30	11
	Female.....	9	6	9	9	8	10	4	7	6	10	10	10
Posey.....	Total.....	24	32	38	24	19	13	32	31	24	32	21	21
	Male.....	12	16	19	13	10	9	17	18	8	20	8	18
	Female.....	12	16	19	11	9	4	15	13	16	12	13	8
Pulaski.....	Total.....	14	7	10	16	6	12	15	15	14	9	14	19
	Male.....	9	3	6	11	2	5	10	10	5	6	6	7
	Female.....	5	4	4	5	4	7	5	5	9	3	8	12
Putnam.....	Total.....	22	23	23	27	19	16	18	26	27	20	17	13
	Male.....	11	15	13	16	12	10	10	16	18	12	8	6
	Female.....	11	8	10	11	7	6	8	10	9	8	9	8
Randolph.....	Total.....	30	20	29	23	23	26	27	35	30	33	30	22
	Male.....	16	12	18	10	8	15	16	20	15	16	14	14
	Female.....	14	8	11	13	15	11	11	15	15	17	16	8
Ripley.....	Total.....	26	20	25	30	12	16	9	10	15	24	14	22
	Male.....	15	13	11	15	6	8	5	6	10	8	13	14
	Female.....	11	7	14	15	6	8	4	4	5	16	1	8
Rush.....	Total.....	20	21	24	18	14	13	15	23	22	21	14	24
	Male.....	9	12	10	11	9	7	8	12	12	15	8	7
	Female.....	11	9	14	7	5	6	7	11	10	6	6	17
Scott.....	Total.....	6	8	13	11	9	9	8	17	8	16	10	8
	Male.....	3	4	4	6	2	6	2	8	2	6	6	1
	Female.....	3	4	9	5	7	3	6	9	6	10	4	2

Baby	Total	27	26	38	32	21	24	26	30	26	30	29	25
	Male	15	16	18	22	6	14	18	15	19	15	11	12
	Female	12	13	20	10	15	10	8	13	8	15	18	13
Spencer	Total	23	18	23	23	26	18	26	14	26	26	23	24
	Male	14	7	13	12	16	12	12	6	18	6	13	12
	Female	9	11	8	11	10	6	14	7	8	18	10	12
Starks	Total	12	14	5	13	8	7	9	7	13	16	11	10
	Male	6	7	3	9	3	5	5	7	10	7	2	6
	Female	6	7	2	4	5	2	4	.....	6	9	9	4
Steuben	Total	17	18	20	18	13	19	13	17	22	17	21	21
	Male	8	9	9	8	6	13	7	8	12	8	12	12
	Female	9	9	11	10	7	6	6	13	9	10	10	9
St. Joseph	Total	89	86	91	88	96	83	88	93	90	93	92	92
	Male	58	58	53	49	51	38	46	61	58	60	46	47
	Female	31	47	38	39	47	45	31	45	32	33	44	45
Sullivan	Total	38	41	46	31	30	30	35	41	41	29	41	44
	Male	22	24	24	17	20	18	26	26	14	14	19	28
	Female	16	17	22	14	10	12	9	15	22	15	22	16
Switzerland	Total	15	15	16	15	18	13	14	21	11	8	19	14
	Male	10	8	6	12	11	6	6	10	3	8	7	7
	Female	5	7	10	3	7	7	8	11	5	5	8	7
Tippesaukee	Total	55	56	45	51	51	43	48	42	44	44	51	58
	Male	31	38	20	31	29	21	29	22	23	26	27	28
	Female	24	18	25	20	22	22	19	20	21	20	24	27
Tipton	Total	24	15	18	24	15	14	23	26	43	19	20	22
	Male	10	9	12	11	8	8	11	12	21	12	10	12
	Female	14	6	6	13	7	6	12	8	22	7	10	10
Union	Total	4	3	4	6	6	2	5	6	10	5	9	6
	Male	2	3	1	4	2	2	3	3	4	4	3	3
	Female	2	.....	3	2	4	1	2	3	6	1	6	2
Vanderburgh	Total	103	82	105	93	101	87	117	91	88	112	115	99
	Male	52	47	54	49	63	51	67	54	64	46	52	52
	Female	51	35	51	44	38	36	50	37	48	42	63	47
Vermillion	Total	28	20	28	21	9	9	24	26	16	20	18	18
	Male	16	14	19	18	6	6	9	10	11	9	11	13
	Female	12	6	9	3	3	3	15	16	9	9	7	5

TABLE No. 3—Continued.

City.	Sex	1900											
		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Essex	Total	12	22	21	27	11	11	12	16	17	10	15	14
	Male	5	9	12	14	4	6	6	12	6	6	8	5
Ferry	Female	7	13	9	13	7	5	6	4	11	4	7	9
Ferry	Total	49	20	42	26	31	37	37	20	26	46	37	37
	Male	23	12	24	15	21	18	21	16	10	27	18	17
Ferry	Female	26	18	18	21	10	19	16	14	16	19	19	20
Ferry	Total	20	25	23	21	19	20	23	20	24	26	24	24
	Male	10	18	11	8	12	9	12	11	14	16	14	11
Franklin	Female	16	19	16	21	18	14	21	14	11	16	22	15
	Male	7	5	8	13	7	9	14	4	6	9	14	7
Franklin	Female	9	14	8	8	11	5	7	10	5	7	8	8
Fulton	Total	16	22	21	21	20	17	13	9	14	20	16	15
	Male	8	11	9	13	7	8	8	2	9	9	8	8
Fulton	Female	8	11	12	8	13	9	5	7	5	11	8	7
Gileson	Total	43	47	40	23	27	23	27	26	26	23	42	31
	Male	26	29	18	12	17	11	17	18	13	11	23	19
Gileson	Female	17	18	22	11	10	12	10	18	13	14	19	12
Grant	Total	67	63	77	60	71	48	68	96	74	80	69	70
	Male	35	35	50	33	45	29	41	60	53	45	31	44
Grant	Female	32	18	27	27	26	19	27	36	22	35	37	26
Greene	Total	45	52	45	28	33	26	43	32	48	55	41	43
	Male	22	20	24	17	21	14	21	21	28	31	20	23
Greene	Female	13	32	21	11	12	12	22	11	20	24	21	20
Hamilton	Total	21	29	38	37	24	22	24	32	20	31	24	24
	Male	15	16	19	24	11	12	10	15	14	16	11	16
Hamilton	Female	6	13	19	13	13	10	14	17	6	15	13	18

Hancock.....	Total.....	36	19	29	29	18	21	17	21	27	21	23	17
	Male.....	33	7	16	20	8	9	10	9	16	10	11	11
	Female.....	13	12	13	9	10	12	7	11	11	11	12	6
Harrison.....	Total.....	26	16	25	25	13	24	19	19	19	24	34	18
	Male.....	13	5	11	13	6	15	10	9	8	15	14	12
	Female.....	13	11	14	12	7	9	9	14	11	9	20	6
Hendricks.....	Total.....	29	30	23	23	26	16	22	23	29	22	16	16
	Male.....	10	16	11	16	19	9	15	12	15	6	5	7
	Female.....	19	14	12	7	7	7	7	11	14	16	11	9
Henry.....	Total.....	39	23	31	37	22	19	27	38	25	27	17	31
	Male.....	22	11	16	17	14	9	13	12	10	12	8	19
	Female.....	17	12	15	20	8	10	14	26	15	15	9	12
Howard.....	Total.....	24	30	42	49	29	28	28	33	48	35	42	27
	Male.....	12	14	22	26	14	19	14	16	23	20	20	16
	Female.....	12	16	20	23	15	9	14	17	25	15	22	11
Huntington.....	Total.....	22	29	28	27	36	18	21	25	43	35	27	28
	Male.....	11	15	17	10	22	11	10	13	25	15	16	14
	Female.....	11	14	11	17	14	7	11	12	18	20	11	14
Jackson.....	Total.....	37	39	38	29	23	14	40	26	44	37	36	36
	Male.....	20	19	26	14	14	10	17	13	19	19	20	24
	Female.....	17	20	12	15	9	4	23	13	25	18	16	12
Jasper.....	Total.....	9	13	9	11	7	5	10	12	18	19	12	10
	Male.....	5	9	6	8	2	5	2	9	13	11	5	7
	Female.....	4	4	3	3	5	5	8	3	5	8	7	3
Jay.....	Total.....	28	24	30	35	36	21	29	36	24	26	33	23
	Male.....	17	11	17	19	18	11	16	14	10	16	16	13
	Female.....	11	13	13	16	18	10	13	22	14	10	17	10
Jefferson.....	Total.....	47	28	33	28	32	26	34	41	26	35	36	32
	Male.....	27	11	17	18	16	11	14	18	15	19	22	22
	Female.....	20	17	16	10	16	15	20	23	11	16	14	10
Jennings.....	Total.....	18	20	17	23	19	17	15	15	15	17	14	19
	Male.....	7	12	9	12	12	7	10	9	5	6	5	8
	Female.....	11	8	8	11	7	10	5	6	10	11	9	11
Johnson.....	Total.....	33	17	16	30	20	17	28	29	22	18	18	23
	Male.....	17	8	3	16	10	16	15	13	13	11	15	15
	Female.....	16	9	13	14	10	11	13	14	9	7	10	8

TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Knox...	Total	53	51	52	36	32	24	56	47	51	46	36	41
	Male	28	23	21	25	12	12	29	26	23	29	13	21
	Female	25	28	31	11	20	12	27	21	28	17	23	20
Kosciusko	Total	27	29	31	42	22	21	22	28	29	26	28	22
	Male	12	11	17	22	15	14	12	15	15	11	11	11
	Female	15	18	14	20	7	7	10	13	14	15	16	11
Lagrange	Total	20	24	17	12	17	12	9	11	14	21	17	27
	Male	10	14	12	6	9	5	4	6	3	10	9	22
	Female	10	10	5	6	8	7	5	5	11	11	8	5
Lake	Total	72	54	75	58	51	55	60	73	65	73	56	74
	Male	41	36	42	35	23	29	34	43	36	47	36	43
	Female	31	18	33	23	28	26	26	30	29	26	20	31
Laporte	Total	40	48	49	46	53	37	34	42	37	49	52	57
	Male	18	24	21	27	26	20	25	26	24	33	32	27
	Female	22	24	28	19	27	17	9	16	13	16	20	30
Lawrence	Total	31	29	33	39	30	28	44	47	46	50	40	30
	Male	15	11	16	24	16	15	23	18	20	21	24	15
	Female	16	18	17	15	14	13	21	29	26	19	16	15
Madison	Total	79	67	63	65	71	54	77	77	100	95	57	69
	Male	39	31	27	39	37	31	47	38	42	46	33	30
	Female	40	36	36	26	34	23	30	39	58	49	24	39
Marion	Total	334	309	364	319	314	284	346	342	302	319	311	358
	Male	169	139	154	161	154	154	185	190	167	179	157	195
	Female	165	170	169	158	160	130	161	152	135	140	154	163
Marshall	Total	25	29	25	27	21	15	14	23	25	22	26	28
	Male	13	19	13	18	9	7	10	10	13	11	13	17
	Female	12	10	12	9	12	8	4	13	12	11	13	11

Martin	Total	16	18	17	17	10	8	13	11	18	12	17	9
	Male	10	9	7	9	6	4	6	5	9	5	10	2
	Female	6	9	10	8	4	4	7	6	9	7	7	7
Miami	Total	31	31	30	34	31	28	26	30	30	36	26	32
	Male	19	19	16	23	18	15	15	19	19	17	9	13
	Female	12	12	23	11	13	13	11	11	20	19	17	19
Monroe	Total	28	30	24	24	24	26	34	21	21	24	29	28
	Male	12	21	15	13	15	15	20	10	11	10	20	16
	Female	16	18	9	11	9	11	14	11	10	14	9	12
Montgomery	Total	38	31	30	42	21	21	29	27	43	31	41	32
	Male	22	15	19	20	12	12	14	18	26	12	20	11
	Female	16	16	20	22	9	9	15	9	17	19	21	21
Morgan	Total	25	22	36	21	25	13	19	23	31	26	24	25
	Male	16	10	20	11	17	6	13	12	14	12	14	13
	Female	9	12	16	10	8	7	6	11	17	14	10	12
Newton	Total	13	8	8	8	8	5	5	15	9	4	7	7
	Male	6	4	2	4	5	1	4	12	5	4	4	4
	Female	7	4	6	4	3	4	1	3	4	4	3	3
Noble	Total	33	26	17	27	21	20	17	22	31	23	21	18
	Male	19	12	10	11	9	13	9	10	15	7	13	8
	Female	17	14	7	16	12	7	8	12	16	16	8	10
Ohio	Total	5	5	5	8	5	4	9	5	3	2	5	7
	Male	3	3	3	5	4	1	5	2	2	1	2	4
	Female	2	2	2	3	1	3	4	3	1	1	3	3
Orange	Total	22	17	21	22	23	14	25	25	17	19	18	21
	Male	10	7	8	8	10	9	15	11	11	12	14	11
	Female	12	10	13	14	13	5	10	14	6	7	4	10
Owen	Total	17	17	12	11	7	5	6	16	10	18	23	13
	Male	6	9	7	6	2	3	5	11	4	10	6	6
	Female	11	8	5	5	5	2	1	5	6	8	13	7
Parke	Total	23	22	29	26	22	18	12	33	34	32	26	22
	Male	11	14	15	16	9	8	8	14	19	16	16	6
	Female	12	8	14	10	13	10	4	19	15	16	12	17
Perry	Total	19	20	18	30	16	21	20	20	24	25	16	20
	Male	10	7	10	19	7	10	10	11	10	6	6	6
	Female	9	13	8	11	9	11	10	9	14	19	10	14

TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Pike.....	Total.....	20	20	37	22	20	23	29	33	29	24	32	30
	Male.....	12	6	18	8	14	8	17	17	14	15	12	14
	Female.....	8	14	19	14	6	15	12	16	15	9	20	16
Porter.....	Total.....	17	14	25	20	16	18	15	19	20	22	40	21
	Male.....	8	8	16	11	8	8	11	12	14	12	30	11
	Female.....	9	6	9	9	8	10	4	7	6	10	10	10
Posey.....	Total.....	24	32	38	24	19	13	32	31	24	32	21	21
	Male.....	12	16	19	13	10	9	17	18	8	20	8	13
	Female.....	12	16	19	11	9	4	15	13	16	12	13	8
Pulaski.....	Total.....	14	7	10	16	6	12	15	15	14	9	14	19
	Male.....	9	3	6	11	2	5	10	10	5	6	9	7
	Female.....	5	4	4	5	4	7	5	5	9	3	5	12
Putnam.....	Total.....	22	23	23	27	19	16	18	26	27	20	17	13
	Male.....	11	15	13	16	12	10	10	16	18	12	8	5
	Female.....	11	8	10	11	7	6	8	10	9	8	9	8
Randolph.....	Total.....	30	20	29	23	23	26	27	35	30	33	30	22
	Male.....	16	12	18	10	8	15	15	16	15	16	16	14
	Female.....	14	8	11	13	15	11	11	15	15	17	16	8
Ripley.....	Total.....	26	20	25	30	12	16	9	10	15	24	14	22
	Male.....	15	13	11	15	6	8	5	6	10	13	13	14
	Female.....	11	7	14	15	6	8	4	4	5	16	1	8
Rush.....	Total.....	20	21	24	18	14	13	15	23	22	21	14	24
	Male.....	9	12	10	11	9	7	7	8	12	15	8	7
	Female.....	11	9	14	7	5	6	7	11	10	6	6	17
Scott.....	Total.....	6	8	13	11	9	9	8	17	8	16	10	8
	Male.....	3	4	4	6	2	6	2	8	2	6	5	1
	Female.....	3	4	9	5	7	3	6	9	6	10	5	2

Shelby	Total.....	27	29	38	32	21	24	26	39	30	39	29	25
	Male.....	15	16	18	22	6	14	18	26	15	19	11	12
	Female.....	12	13	20	10	15	10	8	13	15	20	18	13
Spencer	Total.....	23	18	23	23	26	18	26	27	14	26	23	24
	Male.....	14	7	15	13	16	12	12	20	6	8	13	12
	Female.....	9	11	8	11	10	6	14	7	8	18	10	12
Stark	Total.....	12	14	5	13	8	7	9	7	16	13	11	10
	Male.....	6	7	3	9	3	5	5	7	10	7	2	6
	Female.....	6	7	2	4	5	2	4		6	6	9	4
Steuben	Total.....	17	18	20	18	13	19	13	23	17	22	21	21
	Male.....	8	9	9	8	6	13	7	10	8	12	12	12
	Female.....	9	9	11	10	7	6	6	13	9	10	10	9
St. Joseph	Total.....	89	86	91	88	98	83	77	106	93	90	92	92
	Male.....	39	39	53	49	51	38	46	61	60	58	48	47
	Female.....	31	47	38	39	47	45	31	45	33	32	44	45
Sullivan	Total.....	38	41	46	31	30	30	35	41	29	41	41	44
	Male.....	22	24	24	17	20	18	26	26	14	19	19	28
	Female.....	16	17	22	14	10	12	9	15	15	22	22	16
Switzerland	Total.....	15	15	16	15	18	13	14	21	8	11	19	14
	Male.....	10	8	6	12	11	6	6	10	3	8	11	7
	Female.....	5	7	10	3	7	7	8	11	5	3	8	7
Tippecanoe	Total.....	55	56	45	51	51	43	48	42	44	52	51	58
	Male.....	31	38	20	31	29	21	29	22	23	26	31	31
	Female.....	24	18	25	20	22	22	19	20	21	26	24	27
Tipton	Total.....	24	15	18	24	15	14	23	26	43	19	20	22
	Male.....	10	9	12	11	8	11	8	11	21	12	10	12
	Female.....	14	6	6	13	7	6	12	8	22	7	10	10
Union	Total.....	4	3	4	6	6	2	5	6	10	5	9	5
	Male.....	2	3	1	4	2	1	3	3	4	4	3	3
	Female.....	2		3	2	4	1	2	3	6	1	6	2
Vanderburgh	Total.....	103	82	105	93	101	87	117	91	112	88	115	90
	Male.....	52	47	54	49	63	51	67	54	64	46	52	52
	Female.....	51	35	51	44	38	36	50	37	48	42	63	47
Vermillion	Total.....	28	20	28	21	9	9	24	26	20	16	18	18
	Male.....	16	14	19	18	6	6	6	9	11	9	11	13
	Female.....	12	6	9	3	3	3	15	16	9	7	7	5



TABLE No. 3—Continued.

COUNTIES.	Sex.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Vigo.....	Total.....	91	86	116	106	87	80	93	109	117	106	92	106
	Male.....	47	45	65	66	36	41	51	51	64	64	57	61
	Female.....	44	41	51	40	51	39	42	45	63	42	35	45
Wabash.....	Total.....	32	22	26	24	19	24	22	19	18	31	37	28
	Male.....	17	11	13	11	13	13	12	7	9	13	14	14
	Female.....	15	11	13	13	6	11	10	12	9	18	23	14
Warren.....	Total.....	12	14	7	9	7	8	14	13	15	5	8	8
	Male.....	6	6	5	4	3	4	9	7	11	3	2	5
	Female.....	6	8	2	5	4	4	5	6	4	2	6	3
Warrick.....	Total.....	28	27	24	36	19	19	20	29	33	19	30	26
	Male.....	16	15	7	20	9	7	13	18	17	12	12	12
	Female.....	12	12	17	16	10	12	7	11	16	7	18	14
Washington.....	Total.....	28	16	21	21	26	14	19	20	26	14	18	23
	Male.....	13	9	13	9	14	8	6	8	11	3	10	9
	Female.....	15	7	8	12	12	6	13	12	15	11	8	14
Wayne.....	Total.....	53	57	65	53	44	43	40	57	52	49	47	51
	Male.....	28	23	28	28	25	28	21	33	33	26	20	27
	Female.....	25	34	32	27	19	15	19	24	20	23	27	24
Wells.....	Total.....	21	18	27	27	20	25	18	25	17	37	19	18
	Male.....	6	9	16	19	10	12	10	13	8	22	9	7
	Female.....	15	9	11	8	10	13	8	12	9	15	10	11
White.....	Total.....	8	18	27	16	18	16	14	12	18	18	18	21
	Male.....	4	10	19	10	8	7	5	5	6	9	9	11
	Female.....	4	8	8	6	10	9	9	6	11	9	9	10

Whitney.....	Total.....	21	14	19	18	23	16	16	16	25	23	17	16
Male.....	Male.....	7	9	6	7	13	8	10	9	15	13	8	8
Female.....	Female.....	14	5	13	11	10	8	6	7	10	10	9	8
Total males.....	Total males.....	1,613	1,477	1,741	1,721	1,433	1,307	1,565	1,705	1,637	1,641	1,573	1,596
Total females.....	Total females.....	1,497	1,447	1,560	1,421	1,332	1,122	1,280	1,431	1,509	1,460	1,476	1,428
Grand total.....	Grand total.....	3,110	2,924	3,321	3,142	2,765	2,430	2,845	3,136	3,146	3,101	3,049	3,024

TABLE No. 3—Continued.

*Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, 1906.*

COUNTIES.	Sex.	0	1	2	3	4	5	10	15	20	25	30	35	40	45	50	55	60	65
								to	to	to	to	to	to	to	to	to	to	to	to
								10.	20.	25.	30.	35.	40.	45.	50.	55.	60.	65.	70.
Adams.....	Total.....	60	7	5	1	1	10	10	12	12	7	8	12	7	11	10	20	8	19
	Male.....	35	3	3	1	1	3	6	5	6	2	5	5	1	8	6	13	3	11
	Female.....	25	4	2	.....	.....	7	4	7	6	5	3	7	6	3	4	7	5	8
Allen.....	Total.....	267	43	11	13	14	17	23	32	52	51	50	85	44	45	37	44	72	78
	Male.....	137	20	5	6	8	8	10	16	23	20	22	17	31	34	19	24	36	40
	Female.....	130	23	6	7	6	9	13	16	29	22	28	18	13	21	18	20	36	38
Bartholomew.....	Total.....	78	17	6	4	2	3	8	13	11	19	14	12	14	13	20	14	13	21
	Male.....	58	14	1	2	1	3	6	7	3	7	7	8	7	3	10	8	7	13
	Female.....	20	3	4	2	1	.....	2	6	8	12	7	4	7	10	10	6	6	8
Benton.....	Total.....	32	5	2	3	1	1	.....	3	5	4	4	7	2	5	7	6	5	8
	Male.....	17	4	2	1	.....	1	.....	2	3	1	2	2	1	3	3	3	2	2
	Female.....	15	1	.....	2	1	.....	.....	1	2	3	2	5	1	2	4	6	2	6
Blackford.....	Total.....	54	7	3	.....	.....	3	3	6	6	1	10	6	3	7	3	4	5	4
	Male.....	33	6	2	.....	.....	.....	3	3	1	1	4	3	3	2	1	4	5	3
	Female.....	21	1	1	.....	.....	1	.....	5	5	.....	6	3	.....	5	2	.....	1	1
Boone.....	Total.....	75	10	4	1	.....	5	9	9	14	11	7	7	10	7	9	7	16	24
	Male.....	42	2	2	.....	.....	3	5	2	3	3	3	2	6	4	5	3	10	13
	Female.....	33	8	2	1	.....	3	4	7	11	8	4	5	4	3	4	4	6	11
Brown.....	Total.....	28	2	5	.....	2	4	2	5	4	4	4	1	3	5	4	2	3	6
	Male.....	16	.....	3	.....	1	2	1	4	3	2	1	.....	2	3	2	2	3	1
	Female.....	12	2	2	.....	1	2	1	1	1	2	2	.....	1	3	2	.....	.....	5
Carroll.....	Total.....	51	5	4	6	1	3	5	3	10	10	7	5	7	12	11	8	18	20
	Male.....	26	3	3	4	1	1	3	1	6	6	3	3	3	6	5	4	12	8
	Female.....	25	2	1	2	.....	2	2	1	4	4	4	2	4	6	6	4	6	12

Cass	Total	92	4	5	2	6	8	12	17	24	20	22	21	31	32	36	43	36
	Male	49	2	1	2	4	2	8	5	10	11	13	11	17	14	18	28	18
	Female	43	2	3	2	2	6	4	12	14	9	9	10	14	18	18	15	18
Clark	Total	104	8	4	6	12	5	10	24	15	14	14	13	16	19	11	28	27
	Male	57	6	3	5	8	4	6	16	6	6	6	5	9	11	6	15	14
	Female	47	2	1	1	4	1	4	8	9	8	8	8	7	8	5	13	13
Clay	Total	84	12	7	3	8	6	11	16	17	18	12	15	13	20	24	26	29
	Male	45	4	3	2	4	3	9	7	6	7	7	7	10	9	16	17	19
	Female	39	8	4	1	4	3	2	9	11	11	5	8	6	11	8	9	1
Clinton	Total	70	17	4	2	7	10	12	17	12	14	11	11	18	10	9	19	27
	Male	33	8	1	1	4	5	3	6	3	3	7	4	10	9	2	12	18
	Female	37	9	3	1	3	5	9	11	10	11	4	7	8	10	7	7	9
Crawford	Total	30	3	2	1	2	2	8	10	6	3	4	3	4	5	2	7	12
	Male	17	1	1	2	1	1	1	5	2	2	1	1	2	2	1	2	5
	Female	13	1	1	1	1	1	7	5	4	1	3	2	2	3	1	5	7
Davies	Total	79	14	3	2	8	10	10	25	19	12	12	13	9	15	12	26	17
	Male	46	5	1	4	4	4	2	9	5	6	4	5	3	5	7	14	12
	Female	33	9	2	1	4	6	8	16	14	6	8	8	6	10	5	12	5
Dearborn	Total	45	7	2	4	2	11	4	7	15	11	9	13	14	4	12	19	26
	Male	28	4	1	1	4	2	4	10	3	8	3	8	7	2	9	14	12
	Female	17	3	1	3	7	2	3	5	8	3	6	5	7	2	3	5	14
Decatur	Total	61	10	6	2	3	9	4	7	13	8	11	6	12	12	17	16	22
	Male	33	7	3	1	5	3	5	3	5	1	8	4	7	8	11	6	11
	Female	28	3	3	1	2	4	2	10	3	2	3	2	5	4	6	10	11
Dekalb	Total	53	7	2	2	3	5	11	12	8	7	6	5	7	19	14	11	23
	Male	31	4	2	1	3	5	8	6	5	4	4	4	6	8	7	8	9
	Female	22	3	1	1	2	2	3	6	3	3	2	1	1	11	7	3	14
Delaware	Total	177	31	11	4	6	9	13	38	26	21	19	19	30	30	27	25	39
	Male	109	18	8	2	3	4	7	14	11	10	10	10	13	14	13	14	16
	Female	68	13	3	2	3	5	6	24	15	11	8	9	17	16	14	11	23
Dulois	Total	54	17	11	4	3	4	11	10	6	11	11	6	8	15	6	13	14
	Male	30	7	6	1	1	1	5	4	3	5	6	3	2	8	3	5	11
	Female	24	10	5	3	2	3	6	6	3	6	5	3	6	7	3	8	3
Elkhart	Total	98	18	7	8	3	14	17	28	21	25	16	21	28	40	40	50	50
	Male	57	7	4	3	1	6	7	12	8	10	9	5	16	23	21	28	26
	Female	41	11	3	5	2	8	10	16	13	15	7	16	12	17	19	22	24

TABLE No. 3—Continued.

COUNTIES.	Sex.	0	1	2	3	4	5	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.
Payette.....	Total.....	20	2	5	1	1	4	1	10	3	9	10	4	7	8	7	6	16	13
	Male.....	9	2	3	1	1	4	1	5	2	5	5	3	5	1	3	5	8	7
Floyd.....	Total.....	96	10	8	5	3	13	9	12	13	17	24	13	13	10	20	22	17	25
	Male.....	48	6	4	4	3	6	7	8	8	9	11	4	6	2	8	12	10	15
Fountain.....	Total.....	54	9	3	2	1	5	4	11	11	10	5	7	12	9	2	13	19	16
	Male.....	25	4	1	2	1	4	1	6	3	6	3	1	5	3	1	4	7	11
Franklin.....	Total.....	32	2	3	2	2	4	4	6	16	2	5	9	6	7	12	6	12	9
	Male.....	20	1	1	2	2	2	2	4	4	1	3	5	4	5	3	2	5	4
Fulton.....	Total.....	38	6	1	1	1	1	4	7	11	10	7	5	7	6	14	12	14	11
	Male.....	18	3	1	1	1	1	3	4	4	6	2	3	4	3	8	7	8	7
Gibson.....	Total.....	103	25	10	5	6	14	7	13	21	12	11	22	12	11	11	14	21	22
	Male.....	65	16	2	2	3	6	4	8	9	5	6	11	6	6	5	8	15	15
Grant.....	Total.....	163	19	14	12	10	14	12	23	31	27	24	20	19	27	32	34	70	70
	Male.....	88	8	7	4	4	7	9	11	13	12	12	12	11	16	18	20	55	51
Greene.....	Total.....	134	27	13	8	5	10	8	14	24	14	13	16	14	15	16	14	20	19
	Male.....	81	18	7	4	3	5	2	7	12	7	12	11	8	7	10	12	13	15
Hamilton.....	Total.....	85	18	4	4	3	7	8	9	10	13	8	13	8	13	7	13	13	21
	Male.....	50	13	2	2	1	4	3	2	6	6	3	5	4	5	5	7	8	9
	Total.....	35	5	2	1	2	3	5	7	4	7	5	8	4	2	2	6	6	12
	Female.....																		

Hancock.....	62	11	7	3	5	6	12	13	11	6	5	10	11	9	9	10	34
Male.....	32	8	4	3	5	3	5	6	8	4	3	3	4	1	7	9	11
Female.....	30	3	3	2	0	3	0	7	3	2	2	7	7	8	2	1	13
Harrison.....	49	11	5	1	8	6	8	12	13	8	12	7	4	9	9	14	21
Male.....	24	4	2	1	4	4	6	3	3	5	5	2	3	5	1	10	10
Female.....	25	7	3	1	4	2	2	9	10	3	7	5	1	4	8	4	11
Hendricks.....	56	9	5	4	4	4	11	10	9	8	7	8	14	11	11	12	12
Male.....	30	4	3	2	1	2	9	5	2	2	2	6	5	8	6	6	6
Female.....	26	5	2	2	2	2	2	5	7	5	5	2	9	3	5	6	6
Henry.....	73	12	1	1	2	4	14	13	13	5	9	16	15	15	12	20	23
Male.....	39	5	1	2	4	2	9	5	6	2	3	6	10	7	5	6	8
Female.....	34	7	1	1	2	2	5	8	7	3	6	10	5	8	7	14	15
Howard.....	104	12	10	2	3	10	14	19	14	11	15	15	11	17	19	24	23
Male.....	56	9	7	1	3	6	2	6	6	10	7	9	4	4	3	9	14
Female.....	48	3	3	1	4	4	8	13	4	5	8	6	7	14	10	10	14
Huntington.....	88	14	7	4	2	6	7	4	16	6	14	10	10	8	9	13	25
Male.....	57	7	4	2	2	6	4	2	7	5	1	6	4	5	2	5	11
Female.....	31	7	3	2	0	3	3	9	10	5	8	6	5	6	4	5	14
Jackson.....	94	28	7	5	2	6	14	10	15	6	14	13	9	18	22	21	28
Male.....	57	10	3	2	1	3	8	4	7	3	5	9	4	6	9	10	17
Female.....	37	9	4	3	1	3	6	6	8	3	9	4	5	12	13	11	11
Jasper.....	32	5	2	2	1	2	5	1	6	1	5	4	4	3	7	5	9
Male.....	23	3	2	1	1	1	4	3	3	1	5	3	1	2	7	3	4
Female.....	9	3	2	1	1	1	1	3	1	5	4	1	2	5	2	2	5
Jay.....	94	13	10	2	3	7	18	17	9	9	12	13	5	16	12	15	19
Male.....	56	8	6	1	1	2	4	10	4	3	4	8	4	7	7	8	10
Female.....	38	4	4	1	2	5	3	13	6	5	4	9	5	9	5	7	9
Jefferson.....	73	12	7	5	4	8	8	10	13	18	9	15	9	7	19	21	22
Male.....	43	6	4	2	3	4	4	8	10	3	5	4	5	9	12	11	15
Female.....	30	6	3	3	1	4	6	5	8	6	6	10	5	2	11	7	10
Jennings.....	36	10	6	2	1	5	10	6	10	4	7	6	7	9	7	10	12
Male.....	19	7	3	1	1	1	6	2	3	4	6	3	3	3	3	2	9
Female.....	17	3	3	1	4	2	4	4	7	4	1	3	3	6	4	8	3
Johnson.....	47	3	4	3	5	1	5	8	13	12	11	9	15	9	10	15	16
Male.....	24	1	3	2	3	1	1	2	9	3	6	8	7	3	6	9	13
Female.....	23	2	1	2	2	4	6	7	7	8	5	13	8	6	4	6	3

TABLE No. 3—Continued.

COUNTIES.	Sax.	0	1	2	3	4	5	10	15	20	25	30	35	40	45	50	55	60	65	70.
Knox.....	Total.....	156	26	8	5	5	8	16	18	23	14	17	19	13	25	22	20	20	22	
	Male.....	77	14	6	1	3	7	4	10	10	8	6	6	8	13	15	9	12	13	
	Female.....	79	12.	2	4	2	1	12	8	13	6	11	13	5	12	7	11	8	9	
Kosciusko.....	Total.....	70	9	10	2	5	9	9	11	15	5	10	6	9	10	8	14	16	28	
	Male.....	42	6	4	1	3	5	4	5	10	3	3	1	1	2	6	8	10	15	
	Female.....	28	3	6	1	2	4	5	6	5	2	9	5	8	8	2	6	6	13	
Lagrange.....	Total.....	34	3	3	.....	1	5	4	8	6	9	.....	6	5	7	9	7	14	22	
	Male.....	19	2	2	.....	.....	3	2	2	2	6	.....	2	1	5	5	4	11	13	
	Female.....	15	1	1	.....	1	2	2	6	4	3	.....	4	4	2	4	3	3	9	
Lake.....	Total.....	254	38	20	14	10	22	19	26	24	31	33	33	36	30	26	25	20	27	
	Male.....	129	20	9	6	3	8	15	10	17	22	24	25	24	23	16	18	11	16	
	Female.....	125	18	11	8	7	14	4	16	7	9	9	8	12	7	10	7	9	11	
Laporte.....	Total.....	93	17	6	4	3	11	9	18	25	19	20	25	15	22	20	17	30	38	
	Male.....	59	8	5	3	2	4	5	9	16	9	14	15	11	15	10	10	18	20	
	Female.....	34	9	1	1	1	7	4	9	9	10	6	10	4	7	10	8	12	18	
Lawrence.....	Total.....	127	28	13	11	5	12	9	23	20	20	14	16	15	9	22	12	18	18	
	Male.....	58	18	8	5	4	6	2	10	13	12	6	7	5	3	14	7	9	11	
	Female.....	69	10	5	6	1	6	7	13	7	8	8	9	10	6	8	5	9	7	
Madison.....	Total.....	241	43	13	14	7	19	18	18	31	29	29	31	29	37	38	41	36	45	
	Male.....	128	14	7	10	4	9	10	6	18	12	16	15	14	17	18	23	18	24	
	Female.....	113	25	6	4	3	10	8	12	13	17	13	16	15	20	20	18	18	22	
Marion.....	Total.....	806	97	62	25	27	76	58	140	175	200	173	204	172	187	226	205	220	217	
	Male.....	445	41	32	13	10	31	24	70	90	106	93	114	97	104	121	120	121	104	
	Female.....	361	56	30	12	17	45	34	70	85	94	80	90	75	83	105	85	99	113	
Marshall.....	Total.....	55	13	2	2	.....	5	7	12	6	4	5	9	7	12	6	13	14	25	
	Male.....	33	9	1	.....	.....	2	3	6	3	1	1	3	6	3	3	5	7	13	
	Female.....	22	4	1	2	.....	3	4	6	3	3	4	6	1	3	3	8	7	12	

Martin.....	Total.....	39	11	5	2	2	2	2	6	3	6	4	7	1	3	5	9	5	9	10
	Male.....	25	8	4	2	2	2	2	3	3	6	4	7	1	2	2	4	3	4	6
Miami.....	Total.....	65	10	3	3	1	11	3	22	11	24	5	9	9	15	10	19	16	23	28
	Male.....	37	4	2	3	1	7	1	8	4	11	1	5	5	8	5	12	10	14	14
Monroe.....	Total.....	28	6	1	1	1	4	2	14	7	13	4	4	7	5	7	6	9	14	14
	Male.....	15	3	1	1	1	4	2	7	4	10	3	5	5	6	6	8	7	16	19
Montgomery.....	Total.....	83	10	9	3	2	12	4	12	21	9	7	10	10	10	11	14	8	21	27
	Male.....	45	7	2	2	2	7	2	6	12	4	3	5	6	6	5	8	7	16	21
Morgan.....	Total.....	38	3	2	1	1	5	2	6	9	5	4	5	4	6	6	1	5	12	12
	Male.....	20	1	1	1	1	4	1	3	7	3	3	8	4	8	5	6	7	13	16
Newton.....	Total.....	83	13	2	4	1	12	8	17	12	11	17	12	12	15	17	12	11	23	27
	Male.....	30	6	1	1	1	6	4	7	3	3	8	9	4	8	5	6	7	13	16
Noble.....	Total.....	44	7	1	3	1	6	4	10	9	8	9	4	7	12	6	4	10	11	11
	Male.....	27	2	1	1	1	4	2	5	5	3	4	4	4	4	3	5	6	6	12
Ohio.....	Total.....	63	13	6	5	6	6	6	6	11	12	7	10	6	11	12	10	15	20	20
	Male.....	35	8	4	1	2	4	5	5	3	3	4	4	4	8	7	4	9	8	8
Orange.....	Total.....	28	5	2	4	4	4	4	2	1	6	9	3	6	2	3	5	6	6	12
	Male.....	19	3	3	1	1	5	2	3	2	2	2	2	2	2	5	2	5	5	7
Owen.....	Total.....	11	2	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	2
	Male.....	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Parr.....	Total.....	64	5	2	1	1	2	3	7	7	4	4	4	4	10	7	14	16	23	19
	Male.....	37	3	2	1	1	2	2	3	3	3	2	2	2	3	2	7	9	10	15
Perry.....	Total.....	27	2	2	1	1	2	1	4	4	1	2	2	2	7	5	7	7	13	14
	Male.....	16	1	1	1	1	1	1	2	2	2	2	2	2	4	3	4	4	5	5
Pitt.....	Total.....	6	2	1	1	1	3	1	2	2	3	5	5	2	3	1	1	1	3	3
	Male.....	4	2	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	2	3
Pitts.....	Total.....	51	8	2	1	3	5	6	8	11	12	14	16	6	6	6	10	7	8	8
	Male.....	26	6	1	1	2	4	3	2	6	6	7	10	3	4	7	6	2	5	5
Pitts.....	Total.....	25	2	1	1	1	1	1	3	6	5	6	7	6	3	2	3	4	5	5
	Male.....	13	1	1	1	1	1	1	2	5	8	4	3	5	5	4	6	10	11	8
Pitts.....	Total.....	9	1	1	1	1	3	6	5	2	2	3	3	1	3	1	1	6	6	5
	Male.....	5	1	1	1	1	2	2	1	1	3	1	2	2	2	3	5	4	5	5
Pitts.....	Total.....	69	11	5	3	3	6	6	3	10	16	10	9	10	6	17	10	11	20	17
	Male.....	34	8	2	2	2	3	3	5	6	9	7	7	5	5	6	6	5	9	8
Pitts.....	Total.....	35	3	3	1	1	3	3	2	5	10	1	7	5	4	11	4	6	11	9
	Male.....	20	1	1	1	1	2	2	1	4	15	12	13	6	10	13	7	10	6	18
Pitts.....	Total.....	52	12	7	2	2	5	7	4	15	12	13	13	6	10	13	7	10	6	18
	Male.....	24	4	3	1	1	2	3	1	6	9	8	8	1	6	7	4	6	5	11
Pitts.....	Total.....	28	8	4	1	1	3	4	3	9	7	8	8	5	4	6	3	4	1	11
	Male.....	14	4	2	1	1	2	2	2	4	7	7	7	4	4	5	3	4	1	11



TABLE No. 3—Continued.

COUNTIES.	Sex.		0	1	2	3	4	5	10	15	20	25	30	35	40	45	50	55	60	65
								to 10.	to 15.	to 20.	to 25.	to 30.	to 35.	to 40.	to 45.	to 50.	to 55.	to 60.	to 65.	to 70.
Pike.....	Total.....	92	15	10	3	2	2	12	10	10	16	13	15	8	4	15	7	4	17	12
	Male.....	55	2	6	1	2	6	6	6	2	6	3	7	3	3	9	3	2	8	6
	Female.....	37	13	4	2	2	2	2	4	8	10	10	8	5	1	6	4	2	9	6
Porter.....	Total.....	36	9	2	2	3	4	4	10	14	6	8	8	4	5	6	11	9	8	13
	Male.....	22	4	1	2	2	2	2	5	5	5	7	5	2	2	2	6	6	5	4
	Female.....	14	5	1	2	2	2	2	9	9	1	1	3	2	3	3	5	1	3	9
Posey.....	Total.....	82	16	3	3	3	1	9	6	9	14	13	8	11	6	13	15	17	16	15
	Male.....	49	6	1	1	1	1	5	3	5	5	9	4	6	1	9	8	10	8	9
	Female.....	33	10	2	2	2	2	4	3	4	9	4	4	5	5	4	7	7	8	6
Pulaski.....	Total.....	42	5	1	4	1	1	1	1	4	10	5	5	4	2	2	3	4	4	9
	Male.....	25	2	1	2	1	2	1	1	2	6	1	1	2	2	2	2	4	5	3
	Female.....	17	3	2	2	2	2	2	1	2	4	4	4	2	2	2	2	5	1	7
Putnam.....	Total.....	40	2	4	1	1	1	6	4	9	8	9	12	6	5	6	8	10	16	25
	Male.....	28	1	1	1	1	1	4	1	4	4	5	5	5	4	3	6	6	10	10
	Female.....	12	1	3	1	2	2	2	3	5	4	4	7	1	1	3	2	4	6	15
Randolph.....	Total.....	74	9	1	4	3	8	7	16	16	10	12	7	13	6	7	3	12	17	21
	Male.....	44	6	1	2	1	2	2	2	9	10	7	5	7	4	3	2	3	6	15
	Female.....	30	3	1	2	2	6	6	7	7	6	5	2	9	3	5	1	9	11	6
Ripley.....	Total.....	44	2	2	1	1	5	3	6	11	9	9	3	6	8	8	5	9	12	15
	Male.....	24	1	1	1	4	2	3	7	3	7	3	2	4	2	2	3	6	6	8
	Female.....	20	1	1	1	1	1	1	3	4	6	6	2	2	2	5	3	3	7	7
Rush.....	Total.....	39	6	3	4	6	6	5	10	12	9	9	9	9	9	10	10	11	4	17
	Male.....	21	4	2	3	3	4	6	6	6	8	8	2	2	4	4	3	8	3	9
	Female.....	18	2	1	1	3	3	1	4	6	1	1	7	7	5	3	7	3	2	8
Scott.....	Total.....	17	8	4	2	1	2	3	5	6	6	5	2	10	3	4	6	1	5	10
	Male.....	7	4	2	2	2	2	2	3	2	2	2	2	4	2	1	2	3	3	6
	Female.....	10	4	2	2	1	2	2	3	4	4	3	3	6	1	3	4	1	2	4

Shelby.....	88	9	1	1	4	4	6	12	13	20	13	10	9	11	14	12	19	31
Male.....	55	4			3	2	3	4	8	9	7	7	3	6	5	8	10	17
Female.....	33	5	1	1	1	2	3	8	5	11	6	3	3	6	6	4	9	14
Spencer.....	63	13	10	2	1	8	2	13	9	10	11	9	9	5	6	10	14	7
Male.....	38	8	6	1		3	2	6	5	4	3	5	7	2	3	9	9	6
Female.....	31	5	4	1	1	5		7	4	6	8	4	2	3	3	1	5	1
Stark.....	33	5	2			1	2	3	3	6	3	4	5	5		8	3	10
Male.....	17	2	2			1	1	2	3			1	3			4	4	4
Female.....	16	3				1	1	2	1	3	3	3	2	2	7	3	6	2
Steuben.....	24	5	2	1	2	2	1	10	7	5	7	7	6	7	5	21	8	37
Male.....	15	3	1	1				5	4	4	2	3	4	2	2	2	10	3
Female.....	9	2	1		2	2	1	5	3	1	5	4	2	5	3	11	5	22
St. Joseph.....	288	41	14	16	16	32	21	29	35	38	40	35	35	43	54	46	51	58
Male.....	165	23	9	8	9	17	14	10	18	15	22	17	22	27	38	29	30	29
Female.....	123	19	5	8	7	15	7	19	17	23	18	18	13	16	16	17	21	29
Sullivan.....	142	29	11	5	6	12	5	16	20	13	13	24	10	10	18	15	13	23
Male.....	93	16	4	3	2	8	1	7	10	4	8	13	6	5	11	11	9	15
Female.....	49	13	7	2	4	4	4	9	10	9	5	11	4	5	7	4	4	8
Switzerland.....	18	7	2		1			2	8	6	7	11	7	1	3	9	9	17
Male.....	8	4						1	5	4	3	6	1		2	5	6	12
Female.....	10	3	2		1			1	3	2	4	5	6	1	4	3	8	7
Tippecanoe.....	113	6	6	3	4	6	9	15	23	26	14	25	21	17	24	22	57	50
Male.....	62	3	3	3	1	4	6	8	13	13	7	14	13	12	10	14	36	25
Female.....	51	3	3		3	2	3	9	15	13	7	11	8	5	14	8	21	25
Tipton.....	76	10	8	2	2	5	4	6	11	11	8	6	6	8	9	7	9	9
Male.....	49	4	5	1	1	3	1	4	4	4	2	2	2	3	6	5	3	4
Female.....	27	6	3	1	1	2	3	2	7	7	6	5	4	5	3	2	6	5
Union.....	6	3						3	1	2	2	2	1	1	4	1	3	4
Male.....	3	2						2	1	1			1	1	1	1	2	4
Female.....	3	1						1	1	1	2			3			1	
Vanderburgh.....	265	51	19	15	9	23	12	38	56	43	61	62	47	62	58	56	67	68
Male.....	135	20	3	6	7	14	12	27	29	19	35	24	27	35	41	33	41	37
Female.....	110	31	16	9	2	9	10	11	27	24	26	28	20	27	17	23	26	31
Vermillion.....	76	18	6	1		7	5	9	14	8	5	9	2	4	9	5	5	9
Male.....	46	9	4				4	6	7	5	1	6	1	3	6	3	4	7
Female.....	30	9	2	1	3	3	1	3	7	3	4	3	1	1	3	2	1	2

TABLE No. 3—Continued.

COUNTIES.	Sex.	0	1	2	3	4	5	10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.
Vigo.....	Total.....	282	36	8	6	7	28	20	44	55	61	63	46	45	62	57	60	66	59
	Male.....	159	17	4	4	2	23	13	19	31	36	34	30	18	32	40	38	34	27
	Female.....	123	19	4	2	5	15	7	25	24	25	29	16	27	30	17	22	32	32
Wabash.....	Total.....	56	7	3	6	3	9	6	12	7	8	5	7	5	12	7	11	19	26
	Male.....	32	5	2	4	3	3	4	5	3	4	2	1	4	4	4	6	7	15
	Female.....	24	2	1	2	3	6	2	7	4	4	3	6	1	7	3	5	12	11
Warren.....	Total.....	33	2	3	1	2	2	2	6	2	2	3	3	3	1	8	4	12	7
	Male.....	21	2	2	1	1	2	1	3	1	1	1	1	2	2	3	3	5	5
	Female.....	12				1			3			2		1		5	1	7	2
Warrick.....	Total.....	89	14	8	1	5	6	8	11	15	10	9	12	6	10	7	12	14	24
	Male.....	47	11	4	1	3	3	5	3	5	3	5	5	4	4	4	6	8	16
	Female.....	42	3	4		2	3	5	6	12	7	4	7	2	6	3	6	6	8
Washington.....	Total.....	52	8	2			3	2	9	11	13	11	8	9	10	6	7	11	22
	Male.....	27	4	1			2	2	4	4	3	4	2	6	4	2	3	6	14
	Female.....	25	4	1			1		5	7	10	7	6	3	6	4	4	5	8
Wayne.....	Total.....	83	10	6	3	3	11	5	20	24	21	21	21	21	26	30	44	41	52
	Male.....	57	5	4	2	2	4	2	9	13	10	9	10	8	13	16	21	21	26
	Female.....	26	5	2	1	1	7	3	11	11	11	12	11	13	13	14	23	20	26
Wells.....	Total.....	78	12	3	2	1	6	3	7	11	7	9	6	9	6	10	11	11	13
	Male.....	44	7	2			3	2	2	5	2	3	2	2	4	5	5	7	9
	Female.....	34	5	1	2	1	3	3	5	6	5	6	4	7	2	5	4	3	4
White.....	Total.....	46	5	3	4	3	9	4	4	9	4	4	3	5	10	8	7	9	15
	Male.....	26	3	2	3	1	5	3	2	1	2	2	2	1	5	4	4	2	7
	Female.....	20	2	1	1	2	4	1	2	6	2	2	1	4	5	4	3	7	7

Whitley.....	Total.....	44	6	3	1	.....	4	5	8	11	12	6	10	6	6	9	13	11	13
Male.....	Male.....	23	2	1	.....	2	2	3	.....	5	9	2	4	5	2	4	6	5	7
Female.....	Female.....	21	4	2	1	.....	2	2	8	6	3	4	6	1	4	5	7	6	3
Total males.....	Total males.....	4,500	660	305	167	151	379	328	553	701	650	604	649	623	687	822	854	1,076	1,196
Total females.....	Total females.....	3,504	597	278	170	134	380	321	624	816	733	638	644	535	652	699	672	850	1,063
Grand total.....	Grand total.....	8,004	1,257	583	337	285	759	649	1,177	1,517	1,383	1,242	1,293	1,158	1,349	1,521	1,526	1,926	2,261

TABLE No. 3—Continued.

*Deaths in Indiana by Months, Counties, Ages, Sex, Color, Nationality and Conjugal Condition, 1906.*

COUNTIES.	Sex.		70 to 75.	75 to 80.	80 to 90.	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total
Adams.....	Total.....	10	17	12	12	2	.....	259	2	232	29	.....	125	95	40	1	261
	Male.....	3	9	3	1	1	.....	131	2	116	17	.....	65	49	18	1	133
	Female.....	7	8	9	1	.....	.....	128	.....	116	12	.....	60	46	22	.....	128
Allen.....	Total.....	75	53	80	7	.....	.....	1,127	16	912	209	22	546	386	201	10	1,143
	Male.....	41	28	42	3	.....	.....	581	8	458	118	13	285	211	74	9	689
	Female.....	34	25	38	4	.....	.....	546	8	454	91	9	261	175	127	1	554
Bartholomew.....	Total.....	25	21	35	2	.....	.....	356	8	339	23	2	154	183	71	6	264
	Male.....	13	12	24	1	.....	.....	210	5	197	16	2	110	73	28	4	215
	Female.....	12	9	11	1	.....	.....	146	3	142	7	.....	44	60	43	2	149
Benton.....	Total.....	11	14	5	1	2	.....	132	1	112	21	.....	60	46	27	.....	183
	Male.....	7	9	1	.....	2	.....	65	1	57	9	.....	35	21	10	.....	66
	Female.....	4	5	4	1	.....	.....	67	.....	55	12	.....	25	25	17	.....	67
Blackford.....	Total.....	10	9	6	4	.....	.....	153	1	148	6	.....	83	50	21	.....	154
	Male.....	6	5	5	3	.....	.....	92	1	88	5	.....	51	28	14	.....	93
	Female.....	4	4	1	1	.....	.....	61	.....	60	1	.....	32	22	7	.....	61
Boone.....	Total.....	21	33	30	10	2	.....	315	6	312	7	2	140	109	71	1	321
	Male.....	10	17	16	6	1	.....	154	3	151	4	2	69	61	26	1	157
	Female.....	11	16	14	4	1	.....	161	3	161	3	.....	71	48	45	.....	164
Brown.....	Total.....	9	6	12	3	.....	.....	114	.....	113	1	.....	55	39	20	.....	114
	Male.....	8	5	9	.....	.....	.....	69	.....	68	1	.....	29	26	10	.....	69
	Female.....	1	1	3	3	.....	.....	45	.....	45	.....	.....	22	13	10	.....	45
Carroll.....	Total.....	20	23	19	2	1	.....	250	.....	234	11	5	105	88	40	17	250
	Male.....	9	14	13	2	.....	.....	135	.....	128	6	1	61	56	9	9	135
	Female.....	11	9	6	.....	1	.....	115	.....	106	5	4	44	32	31	8	115

Cass.....	Total.....	40	33	50	5	3	546	5	456	73	22	197	222	119	13	551
	Male.....	19	19	20	5	3	274	4	221	43	14	110	115	42	11	276
	Female.....	21	14	30	5	3	272	1	235	30	8	87	107	77	2	273
Clark.....	Total.....	21	22	32	5	1	363	61	387	36	1	207	133	82	2	424
	Male.....	11	11	16	2	1	187	32	194	24	1	120	70	37	2	219
	Female.....	10	11	16	3	1	176	29	193	12	...	87	63	55	...	205
Clay.....	Total.....	23	24	22	3	1	382	3	342	49	4	161	161	72	1	365
	Male.....	12	14	12	2	1	212	2	178	34	2	87	96	31	...	214
	Female.....	11	10	10	2	1	180	1	164	15	2	74	65	41	1	181
Clinton.....	Total.....	31	17	30	6	...	364	3	361	4	2	149	134	83	1	367
	Male.....	15	10	13	4	...	167	3	167	3	...	71	62	36	1	170
	Female.....	16	7	17	2	...	197	...	194	3	...	78	72	47	...	197
Crawford.....	Total.....	9	18	13	1	3	149	...	143	3	3	59	64	26	...	149
	Male.....	3	15	8	1	1	73	...	69	2	2	31	30	12	...	73
	Female.....	6	3	5	2	2	76	...	74	1	1	28	34	14	...	76
Davies.....	Total.....	26	12	27	1	1	371	2	355	15	3	174	113	42	44	373
	Male.....	17	4	15	...	...	176	1	166	9	2	90	45	18	24	177
	Female.....	9	9	12	1	1	195	1	189	6	1	84	68	24	20	196
Dearborn.....	Total.....	23	29	38	2	2	304	6	248	55	7	123	105	79	3	310
	Male.....	12	16	13	1	1	161	3	138	23	3	71	71	21	1	164
	Female.....	11	13	25	1	1	143	3	110	32	4	52	34	58	2	146
Deatur.....	Total.....	27	20	42	3	...	312	2	288	25	1	118	105	90	1	314
	Male.....	11	10	24	2	...	167	2	158	12	1	66	61	41	1	169
	Female.....	16	10	18	1	...	145	...	133	13	...	52	44	49	...	145
Detab.....	Total.....	26	41	24	4	1	292	...	270	21	1	104	120	68	...	292
	Male.....	15	27	14	2	1	170	...	154	15	1	64	76	30	...	170
	Female.....	11	14	10	2	...	122	...	116	6	...	40	44	38	...	122
Delaware.....	Total.....	36	28	33	4	4	618	20	617	27	4	318	221	108	1	648
	Male.....	23	15	9	...	2	316	10	318	14	3	193	107	35	...	335
	Female.....	13	13	24	4	2	302	11	299	13	1	125	114	73	1	313
Dubois.....	Total.....	9	10	19	...	1	242	4	201	43	2	126	84	34	2	246
	Male.....	3	5	6	...	1	113	4	96	19	2	63	44	4	2	117
	Female.....	6	5	13	...	...	129	...	105	24	...	62	40	27	...	139
Elkhart.....	Total.....	55	23	61	6	2	653	2	577	71	7	225	295	121	4	655
	Male.....	30	18	37	2	2	337	2	294	39	6	120	104	51	4	339
	Female.....	25	15	24	4	...	316	...	283	32	1	105	131	80	...	316

TABLE No. 3—Continued.

COUNTIES.	Sex	70 to 75.	75 to 80.	80 to 90.	90 and over.	Unknown.	White	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
Fayette.....	Total.....	13	13	26	5	3	181	7	175	11	2	70	62	41	15	188
	Male.....	7	6	13	1	3	89	4	86	7	...	39	29	16	9	93
	Female.....	6	7	13	4	...	92	3	89	4	2	31	33	25	6	95
Floyd.....	Total.....	29	43	34	1	1	378	80	377	56	5	197	127	110	4	438
	Male.....	14	21	14	...	1	190	32	194	23	5	113	68	38	3	222
	Female.....	15	22	20	1	...	188	28	183	33	...	84	59	72	1	216
Fountain.....	Total.....	18	22	26	9	1	268	1	252	16	1	112	92	65	...	269
	Male.....	11	8	14	4	...	122	1	119	3	1	59	45	19	...	123
	Female.....	7	14	12	5	1	146	...	133	13	...	53	47	46	...	146
Franklin.....	Total.....	16	18	30	2	...	203	...	174	28	1	83	74	45	1	203
	Male.....	8	10	16	...	...	103	...	87	16	...	45	39	18	1	103
	Female.....	8	8	14	2	...	100	...	87	12	...	38	35	27	...	100
Fulton.....	Total.....	16	19	13	1	1	203	1	195	6	3	78	85	40	1	204
	Male.....	10	10	6	...	1	99	1	95	2	3	39	43	17	1	100
	Female.....	6	9	7	1	...	104	...	100	4	...	39	42	23	...	104
Gibson.....	Total.....	20	17	16	4	1	370	28	372	21	5	207	146	44	1	368
	Male.....	18	8	7	3	1	208	14	204	14	4	120	83	17	1	222
	Female.....	2	9	9	1	...	162	14	168	7	1	87	63	26	...	176
Grant.....	Total.....	68	54	67	7	5	791	41	759	61	12	365	287	170	10	832
	Male.....	47	39	46	4	3	479	21	441	50	9	225	168	98	9	500
	Female.....	21	15	21	3	2	312	20	318	11	3	140	119	72	1	332
Greene.....	Total.....	27	30	31	3	3	453	7	462	22	6	254	158	72	6	490
	Male.....	13	16	14	1	3	264	7	253	13	5	159	84	23	5	271
	Female.....	14	14	17	2	...	219	...	209	9	1	95	74	49	1	219
Hamilton.....	Total.....	19	25	32	6	1	327	9	325	9	2	153	110	70	3	336
	Male.....	7	13	14	5	1	175	4	173	5	1	89	61	28	1	179
	Female.....	12	12	18	1	...	152	5	152	4	1	64	49	42	2	157

Hancock.....	Total.....	25	13	22	4	276	2	266	11	1	127	93	53	5	278
	Male.....	14	9	16	.....	149	1	140	9	1	74	50	22	4	150
	Female.....	11	4	6	4	127	1	126	2	.....	53	43	31	1	128
Harrison.....	Total.....	25	18	20	5	256	10	250	16	.....	129	86	50	1	266
	Male.....	15	13	10	1	128	5	121	10	.....	65	45	20	1	131
	Female.....	10	5	10	4	130	5	129	6	.....	64	41	30	.....	135
Hendricks.....	Total.....	32	17	22	4	268	7	260	3	3	116	103	55	1	275
	Male.....	13	9	10	2	136	5	137	2	2	70	54	16	1	141
	Female.....	19	8	12	2	132	2	132	1	1	46	49	39	.....	134
Henry.....	Total.....	25	27	27	3	332	4	327	8	1	142	133	60	1	336
	Male.....	12	18	12	1	159	4	159	4	.....	63	79	64	.....	163
	Female.....	13	9	15	2	173	.....	168	4	1	78	60	40	1	173
Howard.....	Total.....	32	21	29	5	400	15	397	15	3	190	148	73	4	415
	Male.....	13	16	11	4	201	10	200	8	3	112	74	21	4	211
	Female.....	19	5	18	1	199	5	197	7	.....	78	74	52	.....	204
Huntington.....	Total.....	20	19	35	6	338	1	317	21	1	153	127	58	1	339
	Male.....	12	11	20	4	179	.....	164	14	1	93	62	23	1	179
	Female.....	8	8	15	2	159	1	153	7	.....	60	65	35	.....	160
Jackson.....	Total.....	26	27	25	3	395	4	364	33	2	181	140	76	2	399
	Male.....	19	14	11	2	214	1	190	23	2	105	76	32	2	215
	Female.....	7	13	14	1	181	3	174	10	.....	76	64	44	.....	184
Jasper.....	Total.....	10	7	14	2	135	.....	124	10	1	65	48	21	1	135
	Male.....	7	4	9	1	82	.....	77	5	.....	43	28	11	.....	82
	Female.....	3	3	5	1	53	.....	47	5	1	22	20	10	1	53
Jay.....	Total.....	19	19	24	3	340	5	335	10	.....	174	124	47	.....	345
	Male.....	10	11	13	1	176	2	174	4	.....	100	58	20	.....	178
	Female.....	9	8	11	2	164	3	161	6	.....	74	66	27	.....	167
Jefferson.....	Total.....	35	30	42	4	382	7	358	37	3	176	132	88	2	388
	Male.....	17	15	22	2	203	2	193	15	2	107	71	30	2	210
	Female.....	18	15	20	2	179	5	165	22	1	69	61	58	.....	188
Jennings.....	Total.....	17	16	20	4	206	3	188	18	3	89	81	39	.....	209
	Male.....	7	11	6	3	100	2	91	9	2	47	40	15	.....	102
	Female.....	10	5	14	1	106	1	97	9	1	42	41	24	.....	107
Johnson.....	Total.....	18	23	28	3	264	7	268	2	1	112	105	52	2	271
	Male.....	9	14	13	3	133	4	135	1	1	53	63	20	1	137
	Female.....	9	9	15	.....	131	3	133	1	.....	59	42	32	1	134



TABLE No. 3—Continued.

COUNTIES	Sex.	70 to 75			75 to 80			80 to 90			Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
		70 to 75	75 to 80	80 to 90	70 to 75	75 to 80	80 to 90	70 to 75	75 to 80	80 to 90											
Knox.....	Total.....	31	27	24	3	3	3	509	16	478	41	6	281	153	85	7					525
	Male.....	14	14	10	2	2	2	254	8	235	23	4	144	79	34	5					282
Kosciusko.....	Total.....	25	27	20	9			255	8	243	18	2	137	73	51	2					263
	Male.....	17	13	8	2			167	2	161	5	1	83	63	17	4					327
Lagrange.....	Total.....	8	14	12	7			160		155	5		67	54	38	1					160
	Male.....	16	20	21	1			201		184	15	2	66	82	53						271
Lake.....	Total.....	9	11	10	1			110		101	9	2	27	51	22						110
	Male.....	7	9	11				91		83	6	2	29	31	31						91
Lake.....	Total.....	23	30	17	5	3	3	764	2	554	189	23	468	201	84	13					766
	Male.....	14	19	10	3	3	3	444	1	291	134	20	259	128	45	13					445
Laporte.....	Total.....	9	11	7	2			320	1	283	55	3	209	73	39						321
	Male.....	36	44	56	13	3	3	537	7	364	168	12	210	217	108	9					544
Lawrence.....	Total.....	16	14	33	6	2	2	298	5	201	92	10	135	118	42	8					303
	Male.....	20	30	23	7	1	1	239	2	163	76	2	75	99	66	1					241
Lawrence.....	Total.....	14	22	16	1	2	2	442	5	434	10	3	283	135	45	4					447
	Male.....	9	14	5	1	2	2	225	3	221	5	1	141	61	23	4					219
Madison.....	Total.....	45	44	47	9	9	9	860	14	826	39	9	433	311	121	9					874
	Male.....	17	16	29	4	5	4	430	10	414	18	8	230	163	40	8					440
Marion.....	Total.....	28	26	18	5	4	4	430	4	412	21	1	203	149	81	1					434
	Male.....	210	194	181	29	18	18	3,344	568	3,332	517	53	1,725	1,381	744	52					3,902
Marshall.....	Total.....	110	97	81	6	15	15	1,759	286	1,727	239	29	964	737	268	36					2,045
	Male.....	100	97	100	23	3	3	1,585	272	1,605	228	24	741	624	476	16					1,867
Marshall.....	Total.....	18	30	23	2	1	1	280		246	31	3	111	107	61	1					280
	Male.....	14	20	12	2			153		130	20	3	70	59	23	1					153
Marshall.....	Total.....	4	19	11		1		127		116	11		41	48	38						127

Martin.....	Total.....	15	8	9	2	3	166	163	1	2	78	57	31	166
	Male.....	9	4	6	1	3	82	81	1	1	45	24	13	82
	Female.....	6	4	3	1		84	82	1		33	33	18	84
Miami.....	Total.....	36	25	40	3	1	380	3	351	27	146	144	90	383
	Male.....	23	11	19	2	1	201	1	179	19	81	82	30	202
	Female.....	14	14	21	1		179	2	172	8	65	62	64	181
Monroe.....	Total.....	18	20	17	1	1	311	11	311	8	157	108	52	322
	Male.....	10	8	9			169	9	170	7	94	58	22	178
	Female.....	8	12	8	1	1	142	2	141	1	63	50	30	144
Montgomery.....	Total.....	30	27	36	4	1	380	5	381	13	163	161	63	395
	Male.....	17	19	21	1	1	199	2	188	12	82	86	26	201
	Female.....	13	8	15	3		191	3	193	1	81	75	35	194
Morgan.....	Total.....	21	19	19	3	3	289	1	281	6	134	97	59	300
	Male.....	13	13	13	2	2	157	1	151	6	76	51	31	158
	Female.....	8	6	6	3	1	132		130		58	46	28	132
Newton.....	Total.....	14	4	7	3		97		81	15	42	34	21	97
	Male.....	9	4	3	2		55		49	5	24	20	11	55
	Female.....	5		4	1		42		32	10	18	14	10	42
Noble.....	Total.....	34	14	29	4	2	276		242	28	100	106	67	276
	Male.....	20	6	11	2	1	133		118	12	56	53	21	133
	Female.....	14	8	18	2	1	143		124	16	44	53	46	143
Ohio.....	Total.....	9	5	8	2	1	59	4	54	7	23	20	19	63
	Male.....	5	2	2	1		31	4	29	5	14	15	6	35
	Female.....	4	3	6	1	1	28		25	2	9	5	13	28
Orange.....	Total.....	18	15	23	2	2	241		239	1	106	94	42	244
	Male.....	9	5	10			123	3	122	1	60	53	12	126
	Female.....	9	10	13	2	2	118		117		46	41	30	118
Owen.....	Total.....	13	14	17	3	1	155		146	5	52	71	12	155
	Male.....	7	6	8	2		79		76	1	32	38	9	79
	Female.....	6	8	9	1	1	76		70	4	20	33	23	76
Parke.....	Total.....	14	23	24	3	4	297	4	278	16	136	111	50	301
	Male.....	7	13	13	1	4	149	2	136	11	74	55	18	151
	Female.....	7	10	11	2		148	2	142	5	62	56	32	150
Perry.....	Total.....	16	15	16	1	2	247	2	212	36	109	100	39	249
	Male.....	5	6	10		1	111	1	93	18	51	46	14	112
	Female.....	11	9	6	1	1	136	1	119	18	58	54	25	137

TABLE No. 3—Continued.

COUNTIES.	Sex.	70 to 75.	75 80.	80 90.	90 to over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
Pike.....	Total.....	11	21	19	1	2	318	1	308	7	4	166	105	46	2	319
	Male.....	6	6	11	1	1	155	1	147	5	3	87	53	14	1	155
	Female.....	5	15	8		1	163	1	161	2	1	79	52	32	1	164
Porter.....	Total.....	20	22	20	4	14	246	1	168	59	20	95	88	48	16	247
	Male.....	10	17	20	1	14	148	1	101	30	18	52	58	23	16	149
	Female.....	10	5	0	3		98		67	29	2	43	30	25		98
Posey.....	Total.....	20	12	18	3	1	288	23	280	28	3	147	107	57		311
	Male.....	10	5	7		1	148	15	143	18	2	83	67	13		163
	Female.....	10	7	11	3		140	8	137	10	1	64	40	44		148
Pulaski.....	Total.....	10	8	12	1		151		122	16	3	73	45	29	4	151
	Male.....	4	4	7	1		83		71	9	3	45	24	10	4	83
	Female.....	6	4	5			68		61	7		28	21	19		68
Putnam.....	Total.....	23	20	32	2	2	248	3	240	8	3	88	108	51	4	251
	Male.....	16	13	16	1	2	144	2	138	5	3	53	65	26	2	146
	Female.....	7	7	16	1		104	1	102	3		35	43	25	2	105
Randolph.....	Total.....	32	30	29	1		323	5	320	7	1	152	98	76	2	328
	Male.....	18	16	16	1		169	5	168	5	1	80	53	29	2	174
	Female.....	14	14	13			154		152	2		62	45	47		154
Ripley.....	Total.....	17	23	24	5	5	222	1	165	52	6	81	86	52	4	223
	Male.....	7	15	15	3	4	123	1	91	28	5	48	50	22	4	124
	Female.....	10	8	9	2	1	99		74	24	1	33	36	30		99
Rush.....	Total.....	13	17	23	3		219	10	225	3	1	95	80	52	2	229
	Male.....	5	8	12	1		111	9	117	2	1	58	43	18	2	120
	Female.....	8	9	11	2		108	1	108	1		37	38	34		109
Scott.....	Total.....	10	5	6	2	1	118		116	1	1	50	46	22		118
	Male.....	5	3	3			49		49			22	23	4		49
	Female.....	5	5	3	2	1	69		67	1	1	28	23	18		69

Shelby.....	Total.....	19	23	31	5	4	348	11	332	21	6	171	127	58	3	359
	Male.....	12	15	15	1	2	188	4	174	13	5	101	75	13	3	192
	Female.....	7	13	16	4	2	160	7	158	8	1	70	52	45		167
Spencer.....	Total.....	17	21	19	2	4	241	30	246	23	2	138	78	53	2	271
	Male.....	9	10	6	1	4	132	15	135	11	1	78	48	19	2	147
	Female.....	8	11	13	1		109	15	111	12	1	60	30	34		124
Stark.....	Total.....	4	6	13	1	2	125		103	21	1	54	46	24	1	125
	Male.....	2	5	10		2	70		56	13	1	31	26	12	1	70
	Female.....	2	1	3	1		55		47	8		23	20	12		55
Steuben.....	Total.....	24	19	19	3		222		204	14	4	63	100	59		222
	Male.....	13	13	11	2		113		102	10	1	37	52	24		113
	Female.....	11	6	8	1		109		102	4	3	26	48	35		109
St. Joseph.....	Total.....	56	54	73	9	1	1,069	16	848	225	12	555	343	173	14	1,085
	Male.....	39	36	37	4	1	600	8	457	142	9	319	195	83	11	608
	Female.....	17	18	36	5		469	8	391	83	3	236	148	90	3	477
Sullivan.....	Total.....	20	18	18	3	3	445	2	427	17	3	245	134	65	3	447
	Male.....	10	9	7	3	2	258	1	241	14	2	151	78	24	3	257
	Female.....	10	9	11		1	187	1	186	3	1	94	55	41		190
Switzerland.....	Total.....	18	13	16	4	1	178	1	171	6	2	59	75	42	3	179
	Male.....	13	10	6	3		97		92	5	1	35	45	15	3	98
	Female.....	5	3	10	1	1	81		79	1		24	30	27		81
Tippecanoe.....	Total.....	42	50	53	5	5	583	13	490	97	9	298	297	134	7	596
	Male.....	26	30	28	1	3	324	4	289	52	7	132	132	77	7	323
	Female.....	16	20	25	4	2	259	9	221	45	2	96	95	77		268
Tipton.....	Total.....	25	16	19	3	3	263		248	12	3	136	85	41	1	263
	Male.....	14	11	11	3	1	142		131	10	1	84	40	17	1	142
	Female.....	11	5	8		2	121		117	2	2	52	45	24		121
Union.....	Total.....	5	4	16	2		65		63	2		28	21	16		65
	Male.....	1	1	7	1		33		33			16	11	6		33
	Female.....	4	2	9	1		32		30	2		12	10	10		32
Vanderburgh.....	Total.....	66	60	51	4		1,022	171	982	201	10	547	418	212	16	1,193
	Male.....	34	34	25	3		567	84	533	112	6	316	251	68	16	651
	Female.....	32	26	26	1		455	87	449	89	4	231	167	144		542
Vermillion.....	Total.....	14	15	12	2	2	230	7	223	13	1	143	61	32	1	237
	Male.....	8	8	7	1	2	140	2	133	8	1	89	36	16	1	142
	Female.....	6	7	5	1		90	5	90	5		54	25	16		95

TABLE No. 3—Continued.

COUNTIES.	Sex.	70 to 75.	75 80.	80 to 90.	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single	Married.	Widowed.	Not Reported.	Total.
Vigo.....	Total.....	54	65	41	6	8	1,113	76	1,024	133	32	574	395	191	29	1,199
	Male.....	32	38	19	4	7	618	33	544	84	23	346	217	64	24	631
	Female.....	22	27	22	2	1	495	43	480	49	9	228	178	127	5	568
Wabash.....	Total.....	27	34	30	2	.....	302	.....	278	24	.....	115	126	60	1	302
	Male.....	16	14	11	.....	.....	147	.....	134	13	.....	45	66	15	1	147
	Female.....	11	20	19	2	.....	155	.....	144	11	.....	50	60	45	.....	155
Warren.....	Total.....	6	12	5	1	.....	120	.....	115	4	1	58	44	20	.....	120
	Male.....	3	6	2	.....	.....	65	.....	63	2	1	35	21	9	.....	65
	Female.....	3	6	3	1	.....	55	.....	52	2	.....	21	23	11	.....	55
Warriek.....	Total.....	20	10	16	1	2	296	14	294	13	3	160	100	49	1	310
	Male.....	13	9	10	.....	1	151	7	150	6	2	86	55	16	1	189
	Female.....	7	1	6	1	1	145	7	144	7	1	74	45	33	.....	121
Washington.....	Total.....	25	17	15	4	1	245	1	244	2	.....	99	96	50	1	246
	Male.....	13	7	4	1	.....	112	1	112	1	.....	52	48	13	.....	113
	Female.....	12	10	11	3	1	133	.....	132	1	.....	47	48	37	1	133
Wayne.....	Total.....	53	52	45	16	3	585	26	543	61	7	216	290	130	5	611
	Male.....	29	21	24	6	1	298	15	279	30	4	127	136	44	3	313
	Female.....	24	31	21	10	2	287	11	264	31	3	89	121	86	2	298
Wells.....	Total.....	19	17	28	2	1	272	.....	261	11	.....	128	92	51	1	272
	Male.....	8	12	16	.....	.....	141	.....	133	8	.....	70	50	20	1	141
	Female.....	11	5	12	2	1	131	.....	128	3	.....	58	42	31	.....	131
White.....	Total.....	18	18	14	1	1	204	.....	185	18	1	91	71	41	1	204
	Male.....	10	8	7	.....	1	105	.....	94	10	1	52	39	13	1	105
	Female.....	8	10	7	1	.....	99	.....	91	8	.....	39	32	28	.....	99

Whitley.....	14	20	21	4	223	1	208	13	3	91	87	45	1	224
Male.....	9	10	13	1	112	1	105	6	2	46	48	19	.....	113
Female.....	5	10	8	3	111	.....	103	7	1	45	39	26	1	111
Total males.....	1,299	1,217	1,299	153	124	18,247	762	16,715	1,902	302	9,220	6,938	2,525	19,009
Total females.....	1,076	1,063	1,271	207	56	16,317	666	15,402	1,446	135	6,579	5,781	4,129	16,983
Grand total .....	2,375	2,280	2,570	360	180	34,564	1,428	32,117	3,438	437	16,199	12,719	6,654	35,992

TABLE No. 4.

## Deaths in Indiana by Counties, for the Year 1906.

STATE AND COUNTIES.	Population, Estimated according to U. S. Census Bureau.	Total Deaths Reported for the year 1906.	Annual Death Rate Per 1,000 Population.	Stillbirths.	IMPORTANT AGES.					DEATHS FROM IMPORTANT CAUSES.																
					Under 1 year.	1 to 4 inclusive.	5 to 9 inclusive.	10 to 14 inclusive.	15 to 19 inclusive.	65 Years and over.	Pulmonary Consumption.	Other forms of Tuberculosis.	Typhoid Fever.	Diphtheria.	Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Pneumonia.	Diarrhoeal Diseases under 5.	Cerebro-spinal Meningitis.	Influenza.	Puerperal Septicæmia.	Cancer.	Violence.	Smallpox.
State of Indiana.....	2,648,540	35,902	13.5	2,149	8,004	2,462	759	649	1,177	9,846	3,786	860	913	378	24	101	23	157	3,392	1,823	481	224	145	1,417	2,210	8
Northern Counties.	887,832	11,415	12.8	628	2,527	743	236	218	360	3,357	1,041	107	249	155	6	27	11	34	1,066	577	154	49	44	478	754	..
Adams.....	23,052	261	11.3	18	60	14	10	10	12	60	33	6	6	7	1	1	1	1	20	12	5	..	..	10	14	..
Allen.....	81,502	1,143	14.0	62	267	81	17	23	32	293	118	16	18	14	1	2	10	144	59	16	1	6	56	70	..	
Benton.....	18,611	133	9.7	8	32	11	1	1	3	39	12	2	2	3	..	..	..	..	9	5	1	1	2	6	11	..
Blackford.....	19,914	154	7.7	8	54	10	3	3	6	33	13	3	1	1	..	2	..	..	20	12	2	..	..	5	6	..
Carroll.....	19,933	250	12.5	21	51	16	3	5	2	84	24	4	6	1	..	2	..	1	27	12	6	1	..	12	10	..
Cass.....	35,902	551	15.9	18	92	20	6	8	12	164	49	6	15	3	..	1	1	1	65	19	4	1	..	27	32	..
DeKalb.....	26,272	292	11.1	9	53	12	3	5	11	118	27	5	9	..	..	..	..	1	26	10	1	1	..	14	25	..
Elkhart.....	47,392	655	13.8	29	98	36	14	14	17	205	57	12	5	8	..	1	4	4	54	14	12	2	4	8	11	..
Fulton.....	17,736	204	11.5	16	38	7	1	4	7	60	29	3	6	..	..	..	..	..	14	5	2	1	1	28	42	..
Grant.....	63,973	832	13.0	34	163	55	14	12	23	266	75	15	24	24	..	..	..	4	80	31	7	3	5	28	42	..
Howard.....	29,531	415	14.0	30	104	27	10	5	14	109	42	4	10	4	..	2	..	2	42	23	8	2	3	24	29	..
Huntington.....	29,404	339	11.5	22	88	27	6	7	4	105	31	6	9	5	..	1	..	..	36	15	8	2	4	10	12	..
Jasper.....	15,535	135	8.6	11	32	10	2	5	1	42	10	2	4	..	..	..	..	..	14	8	..	..	1	12	16	..
Jay.....	28,154	345	12.2	28	94	27	7	7	18	84	29	7	11	6	..	2	1	..	37	22	8	1	1	11	14	..
Kosciusko.....	29,293	327	11.1	13	70	26	9	9	11	109	35	4	11	2	..	..	..	4	31	22	6	3	2	11	13	..
Lagrange.....	15,284	201	13.1	13	34	7	5	4	8	80	16	2	4	3	..	1	..	..	18	9	..	3	1	13	12	..
Lake.....	43,494	766	17.6	52	254	82	22	19	26	102	47	10	20	23	3	6	4	2	75	84	7	1	3	15	94	..
Laporte.....	39,902	544	13.6	13	93	30	11	9	18	187	50	11	9	4	..	1	1	..	37	19	14	3	2	27	46	..
Marshall.....	25,639	280	10.9	13	55	17	5	7	12	107	21	3	2	2	..	..	..	..	25	13	..	1	1	14	19	..

Miami.....	29,352	383	13.0	16	65	17	11	3	22	132	44	9	14	2				35	15	6	5		13	28	
Newton.....	11,106	97	8.7	3	19	8	5	2	3	35	7	1	4	1	1			13	10	1			3	5	
Noble.....	23,603	276	11.6	21	64	9	2	3	7	100	16	4	1	1		1		22	15	3	2		17	20	
Porter.....	19,624	247	12.5	7	36	16	4	10	14	88	19	1	2	7	1			22	11	2	6		10	37	
Pulaski.....	15,153	151	9.9	9	42	11	1	1	4	40	13	3	2	1		1		17	8	2	2	1	6	9	
Starke.....	11,668	125	10.7	4	33	8	2	3	3	30	13	1	5	2	1			6	9				6	11	
Steuben.....	15,515	222	14.3	4	24	10	2	1	10	102	17	1	4	1		1		14	6	3	1	2	13	8	
St. Joseph.....	63,451	1,065	16.5	90	288	87	32	21	29	250	90	15	14	19		4	3	83	60	16		2	45	85	
Wabash.....	28,679	302	10.5	19	56	19	9	6	12	119	28	4	6	6		1		20	12	4	3	1	18	19	
Wells.....	24,223	272	11.2	13	78	18	6	3	7	79	28	4	7	2				23	20	2	1		6	18	
White.....	20,525	204	9.9	11	46	15	9	4	4	66	15	4	9	6		4		23	9	5	2	1	7	6	
Whitley.....	17,328	224	12.9	13	44	10	4	5	8	69	23	3	7					14	12	3			9	7	
Central Counties.....	1,087,620	15,166	13.9	935	3,279	906	311	260	509	4,066	1,640	304	361	126	9	43	11	75	1,411	696	189	94	61	626	2
Bartholomew.....	24,885	364	14.6	31	78	28	3	8	13	104	44	11	9	3		4		40	19	4	3	1	16	19	
Boone.....	26,321	324	12.1	26	75	15	5	9	9	118	36	11	5	1				20	11	4			12	20	
Brown.....	9,727	114	11.7	9	28	9	4	2	5	36	13	3	1	8				12	1	1			4	3	
Clay.....	35,785	395	11.0	18	84	23	8	6	11	101	42	3	9	1		3		39	31	7	5	1	21	32	
Clinton.....	28,535	367	12.8	21	70	27	7	10	12	111	42	10	11	6		1		36	13	5	3	1	11	16	
Decatur.....	19,614	314	16.0	22	61	21	9	4	7	114	33	1	3		1	6		32	13				4	2	
Delaware.....	57,421	648	11.2	46	177	52	9	13	18	140	67	15	18	12			3	54	38	3	1	1	20	41	
Payette.....	13,841	188	13.5	4	50	19	5	4	1	70	17	4	3		1			22	2	2	5	1	11	12	
Fountain.....	22,201	269	12.1	13	54	15	4	4	11	91	34	5	3	3				28	8				12	16	
Franklin.....	16,368	203	12.3	11	32	7	4	4	6	75	24	6	3	3		1		15	9	1	4		8	11	
Hamilton.....	31,430	336	10.6	29	85	25	7	8	9	103	41	8	7	2		1	2	25	16	4	5	3	14	15	
Hancock.....	19,785	278	14.0	19	52	21	5	6	12	88	51	3	7	3				39	9	5	1		7	18	
Hendricks.....	21,262	275	12.9	18	56	20	4	4	11	87	36	6	3	1		1	3	23	10	5			8	12	
Henry.....	23,572	336	13.1	22	73	16	6	4	14	105	36	6	3	1				34	13	6	2	3	18	19	
Johnson.....	20,466	271	13.2	15	47	15	1	5	8	88	42	9	3	1		1		19	9				16	15	
Madison.....	84,063	874	10.3	57	241	77	19	18	18	191	85	10	30	10		8		76	72	17	2	7	39	45	
Marion.....	219,655	3,902	17.7	240	806	211	76	56	140	831	432	87	90	26		1	26	396	160	35	12	18	142	286	
Monroe.....	22,153	322	14.5	23	83	24	12	4	12	75	39	3	5		3	1	2	45	9	10	1		12	28	
Montgomery.....	29,933	365	13.2	26	83	30	12	8	17	124	40	4	12	4		1		34	13	11	3	1	18	12	
Morgan.....	21,183	290	13.6	17	63	30	6	6	6	82	38	5	12	3		1	2	25	11	1	5	1	12	13	
Owen.....	15,193	155	10.1	8	22	8	6	5	2	55	19	2	6	2				15	4	1			1	10	
Parke.....	24,062	301	12.5	14	69	19	6	3	10	81	30	5	5	1		1	5	38	20	5	2	4	15	20	
Putnam.....	251,478	251	11.6	12	40	8	6	4	9	102	32	3	6		1		2	3	26	5	3	3	1	17	20
Randolph.....	28,860	328	11.3	16	74	17	8	7	16	113	32	10	5					26	20	8			15	18	
Rush.....	20,594	229	11.1	7	39	13	6	5	10	73	28	10	6	2			1	23	10	2	4	2	10	14	



TABLE No. 4—Continued.

STATE AND COUNTIES.	Population, Estimated According to U. S. Census Bureau.	Total Deaths Reported for the year 1906.	Annual Death Rate per 1,000 Population.	Stillbirths.	IMPORTANT AGES.						DEATHS FROM IMPORTANT CAUSES.															
					Under 1 year.	1 to 4 inclusive.	5 to 9 inclusive.	10 to 14 inclusive.	15 to 19 inclusive.	65 Years and over.	Pulmonary Consumption.	Other forms of Tuberculosis.	Typhoid Fever.	Diphtheria.	Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Pneumonia.	Diarrhoeal Diseases under 5.	Cerebro-spinal Meningitis.	Influenza.	Puerepal Septicemia.	Cancer.	Violence.	Smallpox.
Shelby.....	26,906	359	13.3	27	88	15	4	6	12	109	39	4	6	1	1	1	30	18	5	1	2	12	24			
Tippecanoe.....	40,091	596	14.8	38	113	19	6	9	15	200	59	4	14	1	1	1	40	13	8	7	2	33	39			
Tipton.....	19,500	263	13.4	25	76	22	5	4	6	72	22	8	7	5	1	1	18	28	2	2	3	13	13			
Union.....	6,748	65	9.6	2	6	7	...	3	1	31	5	2	1	1	1	1	7	3	2	1	...	4	2			
Vermillion.....	16,091	237	14.7	13	76	25	7	5	9	52	11	4	10	3	2	2	16	18	4	3	1	4	18			
Vigo.....	66,771	1,189	17.8	78	282	57	38	20	44	225	114	23	40	15	1	1	5	116	51	12	8	3	33	119		
Warren.....	11,537	120	10.4	6	33	8	2	2	6	31	12	3	3	3	1	1	15	6	2	5	...	7	3			
Wayne.....	39,507	611	15.4	22	83	22	11	5	20	218	80	16	15	3	1	3	38	13	8	5	...	34	32			
Southern Counties.....	673,097	9,411	13.9	586	2,198	813	212	171	308	2,393	1,115	189	303	97	9	31	1	915	550	138	81	40	312	491	6	
Clark.....	32,465	424	13.0	16	104	31	12	5	16	107	40	14	15	6	1	1	5	36	28	1	2	3	18	17		
Crawford.....	13,476	149	11.0	3	30	8	1	2	8	53	27	2	6	1	1	1	3	14	9	1	...	...	6	4		
Davies.....	31,889	373	11.8	28	79	38	8	10	10	84	55	9	21	2	6	6	5	27	15	7	4	3	14	14		
Dearborn.....	22,194	310	13.9	12	45	15	11	4	7	118	28	8	8	1	1	1	4	32	7	3	3	3	10	26		
Dubois.....	20,399	246	12.0	19	54	35	3	4	11	52	30	3	9	4	1	1	2	22	24	4	5	1	14	14		
Floyd.....	30,382	438	14.4	40	96	26	13	9	12	132	44	9	8	8	3	3	33	12	3	4	1	13	32			
Gibson.....	32,171	398	12.3	21	103	46	14	7	13	79	47	17	18	6	1	1	6	43	30	9	2	1	16	21		
Greene.....	30,190	400	16.2	31	134	53	10	8	14	117	47	11	11	1	1	1	50	44	6	6	4	13	42			
Harrison.....	266,120	49	18.8	10	49	18	6	6	8	89	44	6	11	3	1	1	1	30	14	9	3	1	8	9		
Jackson.....	27,631	399	14.4	24	94	42	6	6	14	100	46	8	18	3	1	1	2	50	33	8	5	...	16	17		
Jefferson.....	22,913	398	17.3	18	73	28	8	8	10	133	57	10	9	5	1	1	1	33	17	3	5	...	19	16	4	
Jennings.....	16,217	209	12.8	16	36	19	5	3	10	69	33	5	5	3	1	1	1	14	11	4	2	1	11	10		
Knox.....	34,627	525	15.1	40	156	44	8	16	18	107	42	5	3	1	2	2	2	69	34	5	3	...	11	35		
Lawrence.....	28,104	447	15.9	29	127	57	12	9	23	71	53	7	33	2	1	1	2	43	41	5	4	1	10	27		
Martin.....	15,006	166	11.0	8	39	20	2	6	3	44	19	7	7	2	1	1	...	17	8	5	3	...	2	2		

Ohio.....	4,724	63	13.2	1	6	6	1	2	27	13	1	3	2	1	6	2	1	3	6	2	1	3	18	12	3	3	1	3
Orange.....	17,724	244	13.7	14	51	14	5	6	8	66	49	5	10	2	1	3	2	1	3	19	12	3	17	13	4	2	2	8
Perry.....	18,993	240	13.1	11	52	21	5	7	4	66	37	7	8	2	1	1	2	1	1	17	13	4	17	13	4	2	2	8
Pike.....	21,233	319	15.0	19	92	30	12	10	10	64	45	9	11	1	2	2	1	1	2	14	25	9	1	1	1	1	1	8
Posey.....	22,653	311	13.7	25	82	23	9	6	9	68	34	8	8	4	6	6	4	6	28	16	1	1	1	1	1	1	1	10
Ripley.....	20,093	223	11.0	11	44	5	5	3	6	84	23	5	6	1	1	2	4	1	24	4	1	5	2	4	1	5	2	10
Scott.....	8,497	118	13.8	5	17	15	2	3	5	33	19	5	2	3	1	2	1	1	15	7	1	1	1	1	1	1	1	3
Spencer.....	22,346	271	12.0	13	69	26	8	2	13	66	38	4	8	3	1	28	25	6	28	25	6	2	6	2	6	2	6	7
Sullivan.....	26,456	447	16.8	43	142	51	12	5	16	82	42	3	14	9	1	2	43	30	43	30	12	4	10	29	2	4	10	29
Switzerland.....	11,840	179	15.1	3	18	10	10	2	8	70	25	5	5	5	2	17	7	2	17	7	2	4	4	8	10	8	10	10
Vanderburgh.....	76,553	1,193	15.5	89	265	94	23	12	38	249	115	26	25	16	1	6	117	62	117	62	12	8	3	47	44	4	4	44
Warrick.....	23,799	310	13.6	25	89	28	6	8	11	71	25	5	12	5	2	40	10	6	40	10	6	1	3	5	19	5	19	5
Washington.....	19,725	246	12.4	12	52	10	3	2	9	83	38	7	12	1	1	31	10	7	31	10	7	6	3	12	11	12	11	11

TABLE No. 3—Continued.

COUNTIES.	Sex.		70 to 75.	75 to 80.	80 to 90.	90 to and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
Pike.....	Total.....		11	21	19	1	2	318	1	308	7	4	166	105	46	2	319
	Male.....		6	6	11	1	1	155		147	5	3	87	53	14	1	155
	Female....		5	15	8			163	1	161	2	1	79	52	32	1	164
Porter.....	Total.....		20	22	29	4	14	246	1	168	59	20	95	88	48	16	247
	Male.....		10	17	20	1	14	148	1	101	30	18	52	58	23	16	149
	Female....		10	5	9	3		98		67	29	2	43	30	25		98
Posey.....	Total.....		20	12	18	3	1	288	23	280	28	3	147	107	57		311
	Male.....		10	5	7		1	148	15	143	18	2	83	67	13		163
	Female....		10	7	11	3		140	8	137	10	1	64	40	44		148
Pulaski....	Total.....		10	8	12	1		151		132	16	3	73	45	29	4	151
	Male.....		4	4	7	1		83		71	9	3	45	24	10	4	83
	Female....		6	4	5			68		61	7		28	21	19		68
Putnam.....	Total.....		23	20	32	2	2	248	3	240	8	3	88	106	51	4	251
	Male.....		16	13	16	1	2	144	2	138	5	3	53	65	26	2	146
	Female....		7	7	16	1		104	1	102	3		35	43	25	2	105
Randolph...	Total.....		32	30	29	1		323	5	320	7	1	152	98	76	2	328
	Male.....		18	16	16	1		166	5	168	5	1	90	53	29	2	174
	Female....		14	14	13			154		152	2		62	45	47		154
Ripley.....	Total.....		17	23	24	5	5	222	1	165	52	6	81	86	52	4	223
	Male.....		7	15	15	3	4	123	1	91	28	5	48	50	22	4	124
	Female....		10	8	9	2	1	99		74	24	1	33	36	30		99
Rush.....	Total.....		13	17	23	3		219	10	225	3	1	95	90	52	2	229
	Male.....		5	8	12	1		111	9	117	2	1	58	42	18	2	120
	Female....		8	9	11	2		108	1	108	1		37	38	34		109
Scott.....	Total.....		10	5	6	2	1	118		116	1	1	50	46	22		118
	Male.....		5	5	3			49		49			22	23	4		49
	Female....		5	5	3	2	1	69		67	1	1	28	23	18		69

Shelby.....	Total.....	19	23	31	5	4	348	11	332	21	6	171	127	48	3	359
	Male.....	12	10	15	1	2	188	4	174	13	5	101	75	13	8	192
	Female.....	7	13	16	4	2	160	7	158	8	1	70	52	45		167
Spencer.....	Total.....	17	21	19	2	4	241	30	246	23	2	138	78	53	2	271
	Male.....	9	10	6	1	4	132	15	135	11	1	78	48	19	2	147
	Female.....	8	11	13	1		109	15	111	12	1	60	30	34		124
Starke.....	Total.....	4	6	13	1	2	125		103	21	1	54	46	24	1	125
	Male.....	2	5	10		2	70		56	13	1	31	26	12	1	70
	Female.....	2	1	3	1		55		47	8		23	20	12		55
Stauben.....	Total.....	24	19	19	3		222		204	14	4	63	100	59		222
	Male.....	13	13	11	2		113		102	10	1	37	52	24		113
	Female.....	11	6	8	1		109		102	4	3	26	48	35		109
St. Joseph.....	Total.....	56	54	73	9	1	1,069	16	848	235	12	555	343	173	14	1,085
	Male.....	39	26	37	4	1	690	8	457	142	9	319	195	83	11	698
	Female.....	17	28	36	5		469	8	391	83	3	236	148	90	3	477
Sullivan.....	Total.....	20	18	18	3	3	445	2	427	17	3	245	134	65	3	447
	Male.....	10	9	17	3	2	236	1	241	14	2	151	79	24	3	257
	Female.....	10	9	11		1	189	1	186	3	1	94	55	41		190
Switzerland.....	Total.....	18	13	16	4	1	178	1	171	6	2	59	75	42	3	179
	Male.....	13	10	6	3		97	1	92	5	1	35	45	15	3	98
	Female.....	5	3	10	1	1	81		79	1	1	24	30	27		81
Tippecanoe.....	Total.....	42	50	53	5	5	583	13	490	97	9	228	227	134	7	596
	Male.....	26	30	28	1	3	324	4	269	52	7	132	132	57	7	328
	Female.....	16	20	25	4	2	259	9	221	45	2	96	95	77		268
Tipton.....	Total.....	25	16	19	3	3	263		248	12	3	136	86	41	1	263
	Male.....	14	11	11	3	1	142		131	10	1	84	40	17	1	142
	Female.....	11	5	8		2	121		117	2	2	52	46	24		121
Union.....	Total.....	5	4	16	2		65		63	2		28	21	16		65
	Male.....	1	2	7	1		33		33			16	11	6		33
	Female.....	4	2	9	1		32		30	2		12	10	10		32
Vanderburgh.....	Total.....	66	60	51	4		1,022	171	962	201	10	547	418	212	16	1,193
	Male.....	34	34	25	3		567	84	533	112	6	316	251	163	16	651
	Female.....	32	26	26	1		455	87	449	89	4	231	167	144		542
Vermillion.....	Total.....	14	15	12	2	2	230	7	223	13	1	143	61	32	1	237
	Male.....	8	8	7	1	2	140	2	133	8	1	89	36	16	1	142
	Female.....	6	7	5	1		90	5	90	5		54	25	16		95

TABLE No. 3—Continued.

COUNTIES.	Sex.		70 to 75.	75 to 80.	80 to 85.	85 to 90.	90 and over.	Unknown.	White.	Colored.	American.	Foreign.	Not Reported.	Single.	Married.	Widowed.	Not Reported.	Total.
Vigo.....	Total.....		54	65	41	6	8		1,113	76	1,024	133	32	574	395	101	29	1,199
	Male.....		32	38	19	4	7		618	33	544	84	23	346	217	64	24	1,051
	Female.....		22	27	22	2	1		495	43	480	49	9	228	178	37	5	538
Wabash.....	Total.....		27	34	30	2			302		278	24		115	126	60	1	302
	Male.....		16	14	11				147		134	13		65	68	15	1	147
	Female.....		11	20	19	2			155		144	11		50	60	45		155
Warren.....	Total.....		6	12	5	1			120		115	4	1	58	44	20		120
	Male.....		3	6	2				65		63	2	1	35	21	9		65
	Female.....		3	6	3	1			55		52			23	23	11		55
Warrick.....	Total.....		20	10	16	1	2		296	14	294	13	3	160	100	49	1	310
	Male.....		13	8	6		1		151	7	150	6	2	86	55	16	1	159
	Female.....		7	7	10	1	1		145	7	144	7	1	74	45	33		152
Washington.....	Total.....		25	17	15	4	1		245	1	244	2		99	96	50	1	246
	Male.....		13	7	4	1			112	1	112	1		52	48	13		113
	Female.....		12	10	11	3	1		133		132			47	48	37	1	133
Wayne.....	Total.....		53	52	45	16	3		585	26	543	61	7	216	290	120	5	611
	Male.....		29	21	24	6	1		296	15	279	30	4	127	139	44	3	313
	Female.....		24	31	21	10	2		287	11	264	31	3	89	121	86	2	298
Wells.....	Total.....		19	17	28	2	1		272		261	11		128	92	51	1	272
	Male.....		8	12	16				141		133	8		70	50	20	1	141
	Female.....		11	5	12	2	1		131		128	3		58	42	31		131
White.....	Total.....		18	18	14	1	1		204		186	18	1	91	71	41	1	204
	Male.....		10	8	7		1		105		94	10	1	52	39	13	1	105
	Female.....		8	10	7	1			99		91	8		39	32	28		99

Whitley.....	14	20	21	4	.....	223	1	208	13	3	91	87	45	1	224
Male.....	9	10	13	1	.....	112	1	105	6	2	46	48	19	.....	113
Female.....	5	10	8	3	.....	111	.....	103	7	1	45	39	26	1	111
Total males.....	1,299	1,217	1,299	153	124	18,247	762	16,715	1,992	302	9,220	6,938	2,525	326	19,009
Total females.....	1,076	1,063	1,271	207	56	16,317	666	15,402	1,446	135	6,979	5,781	4,129	94	16,983
Grand total.....	2,375	2,280	2,570	360	180	34,564	1,428	32,117	3,438	437	16,199	12,719	6,654	420	35,992

TABLE No. 4.

## Deaths in Indiana by Counties, for the Year 1906.

STATE AND COUNTIES.	IMPORTANT AGES.										DEATHS FROM IMPORTANT CAUSES.															
	Population, Estimated According to U. S. Census Bureau.	Total Deaths Reported for the year 1906.	Annual Death Rate per 1,000 Population.	Stillbirths.	Under 1 year.	1 to 4 inclusive.	5 to 9 inclusive.	10 to 14 inclusive.	15 to 19 inclusive.	65 Years and over.	Pulmonary Consumption.	Other forms of Tuberculosis.	Typhoid Fever.	Diphtheria.	Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Pneumonia.	Diarrhoeal Diseases under 5.	Cerebro-spinal Meningitis.	Influenza.	Puerperal Eclampsia.	Cancer.	Violence.	Smallpox.
State of Indiana.	2,648,549	35,992	13.5	2,149	8,004	2,462	759	649	1,177	9,846	3,796	660	913	378	24	101	23	157	3,392	1,823	481	224	145	1,417	2,210	8
Northern Counties.	887,832	11,415	12.8	628	2,527	743	236	218	360	3,357	1,041	167	249	155	6	27	11	34	1,066	577	154	49	44	478	754	
Adams	23,052	261	11.3	18	60	14	10	10	12	60	33	6	6	7		1		1	20	12	5			10	14	
Allen	81,502	1,143	14.0	62	267	81	17	23	32	293	118	16	18	14	1	2		10	144	59	16	1	6	56	70	
Benton	18,611	133	9.7	8	32	11	1	3	3	39	12	2	2						9	5	1	1	2	6	11	
Blackford	19,914	154	7.7	8	54	10	3	3	6	33	13	4	3	1				1	20	12	2			5	6	
Carroll	19,953	250	12.5	21	51	16	3	5	2	84	24	4	6	1		2			27	12	6	1		12	10	
Cass	35,902	551	15.9	18	92	20	6	8	12	164	49	6	15	3		1		1	65	19	4	1		27	32	
Dekalb	26,272	292	11.1	9	53	12	3	5	11	118	27	5	9					1	26	10	1	2	1	14	25	
Elkhart	47,392	655	13.8	29	98	36	14	14	17	205	57	12	5	8		1		4	54	14	12	2	4	28	35	
Fulton	17,736	204	11.5	16	38	7	1	4	7	60	29	3	6						14	5	2	1	1	8	11	
Grant	63,973	832	13.0	34	163	55	14	12	23	266	75	15	24	24				4	80	31	7	3	5	26	42	
Howard	29,531	415	14.0	30	104	27	10	5	14	109	42	4	10	4				2	42	23	8	2	3	24	29	
Huntington	39,404	339	11.5	22	88	27	6	7	10	105	31	6	9	5		1			36	15	8	2	4	10	12	
Jasper	15,535	135	8.6	11	32	10	2	5	1	42	10	2	4						14	8			1	12	6	
Jay	28,154	345	12.2	28	94	27	7	7	18	84	39	7	11	6		2	1		37	22	8	1	1	11	14	
Kosciusko	29,295	327	11.1	13	70	26	9	9	11	109	35	4	11	2				4	31	22	6	3	2	11	13	
Lagrange	15,284	201	13.1	13	34	7	5	4	8	80	16	2	4	3		1			18	9		3	1	13	12	
Lake	43,494	766	17.6	52	254	82	22	19	26	102	47	10	20	23	3	6	4	2	75	84	7	1	3	15	94	
Laporte	39,962	544	13.6	13	93	30	11	9	18	187	50	11	9	4		1			37	15	14	3	2	27	46	
Marshall	25,639	280	10.9	13	55	17	5	7	12	107	21	3	2	2					25	13		1	1	14	19	





TABLE No. 4—Continued.

STATE AND COUNTIES.	IMPORTANT AGES.										DEATHS FROM IMPORTANT CAUSES.											
	Under 1 year.	1 to 4 inclusive.	5 to 9 inclusive.	10 to 14 inclusive.	15 to 19 inclusive.	20 Years and over.	Pulmonary Consumption.	Other forms of Tuberculosis.	Typhoid Fever.	Diphtheria.	Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Pneumonia.	Diarrhoeal Diseases under 5.	Cerebro-spinal Meningitis.	Influenza.	Puerperal Septicemia.	Cancer.	Violence.	Smallpox.
Shelby	26,906	88	15	4	6	12	109	39	4	6		1			30	18	5	1	2	12	24	
Tippecanoe	40,091	113	19	6	9	15	200	59	4	14		1			40	28	6	7	3	33	89	
Tipton	19,500	263	22	5	4	6	72	22	8	7		1			18	23	2	2	3	13	13	
Union	6,748	6			3	1	31	9	2	1					7	3	2	1		4		
Vermillion	16,091	76	25	7	5	9	52	11	4	10		2			16	18	4	3	1	4	18	
Vigo	66,771	282	57	38	20	44	225	114	23	40		1		5	116	51	12	8	3	83	119	
Warren	11,537	33	8	2	2	6	31	12	3	3		1		3	15	6	2	2		7	3	
Wayne	39,507	83	22	11	5	20	218	80	16	15					38	13	8	5		34	32	
Southern Counties	673,097	2,198	813	212	171	308	2,393	1,115	189	303		97	9	31	915	550	138	81	40	313	491	6
Clark	32,465	104	31	12	5	10	107	40	14	15		1		5	36	28	1	2	3	18	17	
Crawford	13,476	149	11	8	2	8	53	27	2	6		1		1	24	9	1		2	6	4	
Davies	31,389	373	38	8	10	10	84	55	9	21		2		5	17	15	7		4	3	14	4
Dearborn	22,194	310	13	9	12	45	11	4	7	118		28	8	8	1	32	7	4	3	10	26	
Dubois	20,399	246	12	0	19	54	35	3	4	11		52			22	24	4	5	1	14	14	
Floyd	30,382	438	14	4	40	96	26	13	9	12		132			33	12	3	4	1	13	32	
Gibson	32,171	398	12	3	21	103	46	14	7	13		79			43	30	9	2	1	16	21	
Greene	30,190	490	16	2	31	134	53	10	8	14		117			50	44	6	6	4	13	42	
Harrison	26,068	296	12	0	10	49	18	8	6	8		1		1	30	14	9	3	1	8	9	
Jackson	27,631	399	14	4	24	94	42	6	6	14		109			50	33	8	5	1	16	17	
Jefferson	22,913	398	17	3	18	73	28	8	8	10		133			38	17	3	5	1	19	16	4
Jennings	16,217	209	12	8	3	10	69	33	5	5		3		1	11	14	2	2	1	8	10	
Knox	34,627	525	15	1	40	156	44	8	16	18		107			69	34	5	3	1	11	35	
Lawrence	28,104	447	15	9	29	127	57	12	9	23		71			42	41	5	4	1	10	27	
Martin	15,006	166	11	0	8	39	20	2	6	3		44			17	8	5	3	1	2	2	



TABLE No. 5.

## Death Rates by Counties for the Year 1906.

STATE AND COUNTIES.	Population Estimated According to U. S. Census Bureau.	Total Deaths Reported for the Year 1906.	Annual Death Rate per 1,000 Population.	DEATHS FROM IMPORTANT CAUSES.															
				Pulmonary Consumption.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria.	Group.	Scarlet Fever.	Measles.	Whooping Cough.	Pneumonia.	Diarrhoeal Dis- eases Under 5.	Cerebro-spinal Meningitis.	Influenza.	Septicæmia.	Cancer.	Violence.	Smallpox.
State of Indiana.....	2,648,549	35,992	13.5	143.3	24.9	34.4	14.2	.9	3.8	.8	5.9	128.0	68.8	18.1	8.4	5.4	53.5	83.4	.3
Northern Counties.....	887,832	11,415	12.8	117.2	18.8	28.0	17.4	.6	3.0	1.2	3.8	120.0	66.1	17.3	5.5	4.9	53.8	84.9	....
Adams.....	23,052	261	11.3	143.1	26.0	26.0	30.3	....	4.3	....	4.3	98.7	52.0	21.6	....	....	43.3	60.7	....
Allen.....	81,502	1,143	14.0	144.7	19.6	22.0	17.1	1.2	2.4	....	12.2	176.6	72.3	19.6	1.2	7.3	68.7	85.8	....
Benton.....	13,611	133	9.7	88.1	14.6	14.6	14.6	....	....	....	....	166.1	36.7	7.3	7.3	14.6	44.0	80.8	....
Blackford.....	18,914	184	7.7	63.2	....	15.0	5.0	....	....	....	5.0	100.4	60.2	10.0	....	....	23.1	30.1	....
Carroll.....	19,953	250	12.5	120.2	20.0	30.0	5.0	....	10.0	....	....	135.3	60.1	30.0	....	5.0	60.1	50.1	....
Cass.....	35,992	551	15.9	136.4	16.7	41.7	8.3	....	2.7	....	2.7	181.0	52.9	11.1	2.7	....	75.2	90.5	....
DeKalb.....	26,272	292	11.1	102.7	19.0	34.2	....	....	....	....	3.6	98.9	38.0	3.6	7.6	3.6	53.3	95.1	....
Elkhart.....	47,392	635	13.8	120.2	25.3	10.5	16.8	....	2.1	....	8.4	113.9	29.5	25.3	4.2	8.4	50.6	73.8	....
Fulton.....	17,736	204	11.5	163.5	16.9	33.8	....	....	....	....	....	78.9	28.1	11.2	5.6	5.6	45.1	62.0	....
Grant.....	63,973	832	13.0	117.2	23.4	37.5	37.5	....	....	....	6.2	125.0	48.4	10.9	4.6	7.8	40.6	65.6	....
Howard.....	29,531	415	14.0	142.2	13.5	33.8	13.5	....	....	....	6.7	142.2	77.8	27.0	6.7	10.1	81.2	98.2	....
Huntington.....	29,404	339	11.5	105.4	20.4	30.6	17.0	....	3.4	....	....	122.4	51.0	27.2	6.8	13.6	34.0	40.8	....
Jasper.....	15,535	135	8.6	64.3	12.8	25.7	....	....	....	....	....	90.1	51.4	....	....	6.4	77.2	38.6	....
Jay.....	28,154	345	12.2	138.5	24.8	39.0	21.3	....	7.1	3.5	....	131.4	78.1	28.4	3.5	....	39.0	49.7	....
Kosciusko.....	29,245	327	11.1	119.4	13.6	37.5	6.8	....	....	....	13.6	105.8	75.0	20.4	10.2	6.8	37.5	44.3	....
Lagrange.....	15,284	201	13.1	104.6	13.0	26.1	19.6	....	6.5	....	....	117.7	58.8	....	19.6	6.5	85.0	78.5	....
Lake.....	43,494	766	17.6	108.0	22.9	45.9	52.8	6.8	13.7	9.2	4.5	172.4	193.2	16.0	2.2	6.8	34.4	216.1	....
Laporte.....	39,962	544	13.6	125.1	27.5	22.5	10.0	....	2.5	2.5	....	92.5	37.5	35.0	7.5	5.0	67.5	115.1	....
Marshall.....	25,639	280	10.9	81.9	11.7	7.8	7.8	....	....	3.9	....	97.5	50.7	....	3.9	3.9	54.6	74.1	....

Miami.....	29,352	383	13.0	149.9	30.6	47.6	6.8	.....	.....	119.2	51.1	20.4	17.0	.....	44.2	95.3			
Newton.....	11,106	97	8.7	63.0	9.0	36.0	9.0	.....	9.0	117.0	90.0	9.0	.....	.....	27.0	45.0			
Noble.....	23,603	276	11.6	67.7	16.9	4.1	4.1	.....	4.1	93.2	63.5	12.7	8.4	.....	72.0	84.7			
Porter.....	19,624	247	12.5	96.7	5.0	10.1	35.6	5.0	.....	112.1	56.0	10.1	30.5	.....	50.9	188.5			
Pulaski.....	15,153	151	9.9	85.9	19.7	13.1	6.5	.....	.....	112.1	52.7	13.1	13.1	6.5	39.5	59.3			
Stark.....	11,668	125	10.7	111.4	.....	42.8	17.1	8.5	.....	51.4	77.1	19.3	6.4	12.8	51.4	94.2			
Steuben.....	15,515	222	14.3	109.5	6.4	25.7	6.4	.....	.....	90.2	38.6	.....	.....	.....	83.7	51.5			
St. Joseph.....	65,451	1,065	16.5	137.5	22.9	21.3	29.0	6.1	4.5	126.8	91.6	24.4	.....	3.0	68.7	129.8			
Walsh.....	28,679	302	10.5	97.6	13.9	20.9	20.9	.....	3.4	69.7	41.8	13.9	10.4	3.4	62.7	66.2			
Wells.....	24,223	272	11.2	115.5	16.5	28.8	8.2	.....	.....	94.9	82.5	8.2	4.1	.....	24.7	74.3			
White.....	20,525	204	9.9	73.0	19.4	43.8	29.2	19.4	4.8	112.0	43.8	24.3	9.7	4.8	34.1	29.2			
Whitley.....	17,328	224	12.9	132.7	17.3	40.3	.....	.....	.....	80.7	69.2	17.3	.....	.....	51.9	40.3			
Central Counties.....	1,087,620	15,166	13.9	150.7	27.9	33.1	11.5	8	3.9	1.0	6.8	129.7	63.9	17.3	8.6	5.6	57.5	88.7	1
Bartholomew.....	24,885	364	14.6	176.8	44.2	36.1	12.0	.....	16.0	4.0	160.7	76.3	16.0	12.0	4.0	64.2	76.3	.....	.....
Boone.....	26,321	321	12.1	136.7	41.7	18.9	3.7	.....	.....	3.7	75.9	41.7	15.1	.....	45.5	75.9	.....	.....	
Brown.....	9,727	114	11.7	133.6	30.8	10.2	82.2	.....	.....	.....	123.3	10.2	10.2	.....	41.1	30.8	.....	.....	
Clay.....	35,755	395	11.0	117.3	8.3	25.1	2.7	2.7	8.3	8.3	81.0	86.6	19.5	13.9	2.7	58.6	80.4	.....	.....
Clinton.....	28,535	367	12.8	147.1	35.0	38.5	21.0	3.5	3.5	3.5	126.1	45.5	17.5	10.5	3.5	38.5	56.0	.....	.....
Decatur.....	19,614	314	16.0	168.2	5.0	15.2	.....	5.0	30.5	.....	163.1	66.2	.....	20.3	10.1	91.7	96.8	.....	.....
Delaware.....	57,421	648	11.2	116.6	26.1	31.3	20.8	1.7	.....	5.2	94.0	64.1	5.2	1.7	1.7	34.8	71.4	.....	.....
Fayette.....	13,841	188	13.5	122.8	28.9	21.6	.....	7.2	.....	.....	158.9	14.4	14.4	36.1	7.2	70.4	86.6	.....	.....
Franklin.....	22,201	269	12.1	153.1	22.5	13.5	13.5	.....	.....	4.5	126.1	36.0	9.0	4.5	.....	54.0	72.0	.....	.....
Hamilton.....	16,388	263	12.3	146.4	36.6	18.3	18.3	6.1	.....	12.2	91.5	54.9	6.1	24.4	.....	48.8	67.1	.....	.....
Hancock.....	31,430	336	10.6	130.4	25.4	22.2	6.3	.....	3.1	6.3	79.5	50.9	12.7	15.9	9.5	44.5	47.7	.....	.....
Hendricks.....	19,755	278	14.0	156.9	15.1	35.4	15.1	5.0	.....	.....	118.4	45.5	25.3	.....	5.0	35.4	91.1	.....	.....
Henry.....	21,292	275	12.9	117.4	28.1	14.0	4.6	4.6	.....	14.0	178.4	46.9	32.4	4.6	4.6	57.3	58.3	.....	.....
Johnson.....	25,572	326	13.1	140.7	23.4	11.7	3.9	.....	.....	.....	132.7	43.9	19.5	7.8	11.7	70.3	38.1	.....	.....
Madison.....	20,468	271	13.2	205.0	43.9	14.6	4.8	4.8	.....	4.8	92.7	43.9	19.5	4.8	.....	78.0	73.2	.....	.....
Marion.....	84,063	874	10.3	101.1	11.8	35.6	11.8	1.1	.....	0.5	90.4	85.6	20.2	2.3	8.3	46.3	53.5	.....	.....
Monroe.....	219,635	3,602	17.7	196.6	30.6	40.9	11.8	9	.....	11.8	180.2	81.9	15.9	5.4	8.1	64.6	127.4	.....	.....
Montgomery.....	22,133	322	14.5	176.0	13.5	22.5	22.5	13.3	4.5	9.0	263.1	40.6	43.1	4.5	.....	126.3	.....	.....	.....
Morgan.....	29,933	386	13.2	136.9	13.3	40.0	13.3	3.3	3.3	.....	113.5	43.4	96.7	10.0	3.3	60.1	40.0	.....	.....
Owen.....	15,193	185	10.1	125.0	13.1	39.4	13.1	.....	.....	.....	118.0	51.9	4.7	23.6	4.7	56.6	61.3	.....	.....
Putnam.....	24,062	301	12.5	124.5	20.7	20.7	4.1	4.1	.....	6.5	98.7	26.3	6.5	13.1	6.5	65.8	46.0	.....	.....
Randolph.....	28,880	328	11.3	110.8	34.6	17.3	.....	4.6	6.9	10.3	121.0	23.2	13.9	13.9	4.6	79.1	93.1	.....	.....
Rush.....	20,594	229	11.1	135.9	45.5	29.1	9.7	.....	.....	4.8	90.0	69.2	27.7	19.4	9.7	51.9	62.8	.....	.....

TABLE No. 5—Continued.

STATE AND COUNTIES.	Population Estimated According to U. S. Census Bureau.	Total Deaths Reported for the Year 1906.	Annual Death Rate per 1,000 Population.	DEATHS FROM IMPORTANT CAUSES.															
				Pulmonary Consumption.	Other Forms of Tuberculosis.	Typhoid Fever.	Diphtheria.	Croup.	Scarlet Fever.	Measles.	Whooping Cough.	Pneumonia.	Diarrhoeal Dis- eases Under 5.	Cerebro-spinal Meningitis.	Influenza.	Puerperal Septicemia.	Cancer.	Violence.	Smallpox.
Shelby.....	26,906	359	13.3	144.9	14.8	22.2	2.4		3.7			111.4	66.9	18.5	3.7	7.4	44.6	89.1	.....
Tippecanoe.....	40,091	596	14.8	147.1	9.9	34.9	2.4		2.4			99.7	32.4	19.9	17.4	4.9	82.3	97.2	.....
Tipton.....	19,500	263	13.4	112.8	41.0	35.0	25.6		5.1			92.3	143.5	10.2		15.3	66.6	66.6	.....
Union.....	6,748	65	9.6	74.0	29.6	14.8	14.8					103.7	44.4	29.6	14.8		59.2	29.6	.....
Vermillion.....	16,091	237	14.7	68.3	24.8	62.1	18.6			12.4		99.4	111.8	24.8	18.6	6.2	24.8	111.8	.....
Vigo.....	66,771	1,189	17.8	170.7	34.4	59.9	22.4	1.4	1.4		7.4	173.7	76.3	17.9	11.9	4.4	49.4	178.2	.....
Warren.....	11,537	120	10.4	104.0	26.0	26.0				7.5		130.0	52.0	17.3		60.6	26.0	26.0	.....
Wayne.....	38,507	611	15.4	202.4	40.4	37.9	7.5	2.5				96.1	32.9	20.2	12.6		86.0	80.9	.....
Southern Counties.....	673,097	9,411	13.9	165.6	28.0	45.0	14.3	1.3	4.6	.1	7.1	135.9	81.7	20.5	12.0	5.9	46.5	72.9	.8
Clark.....	32,465	424	13.0	123.2	43.1	46.2	18.4		3.0		15.4	110.8	86.2	3.0	6.1	9.2	55.4	52.3	.....
Crawford.....	13,476	149	11.0	200.3	14.8	44.5	7.4		7.4		22.2	103.8	66.7	7.4	14.8		44.5	29.6	.....
Davies.....	31,389	373	11.8	175.2	28.6	66.9	6.3				15.9	96.0	47.7	22.3	12.7	9.5	44.6	44.6	.....
Dearborn.....	22,194	310	13.9	126.1	36.0	36.0	4.5		27.0		18.0	144.1	31.5	13.5	13.5		45.0	116.2	.....
Dubois.....	20,369	246	12.0	147.0	14.7	44.1	19.6		4.9		9.8	107.8	117.6	19.6	24.5	4.9	68.6	68.6	.....
Floyd.....	30,382	438	14.4	144.8	29.6	26.3	26.3	9.8	9.8			108.6	39.4	9.8	13.1	3.2	42.7	105.3	.....
Gibson.....	32,171	368	12.3	146.0	21.7	55.9	18.9				18.9	133.6	93.2	28.2	6.2	3.1	49.7	65.2	.....
Greene.....	30,190	490	16.2	155.6	36.4	36.4	3.3	3.3	3.3			165.6	145.7	19.8	19.8	13.2	43.0	136.1	.....
Harrison.....	22,068	266	12.0	199.3	27.1	49.8	13.5		4.5		4.5	135.9	63.4	40.7	13.5	4.5	36.2	40.7	.....
Jackson.....	27,631	399	14.4	166.4	28.9	65.1	10.8			7.2		180.9	119.4	28.9	18.0		57.9	61.5	.....
Jefferson.....	22,913	398	17.3	248.7	43.6	36.2	21.8		4.3		4.3	144.0	74.1	13.0	21.8		82.9	69.8	17.4
Jennings.....	16,217	209	12.8	203.4	30.8	30.8	18.4		6.1		6.1	96.3	67.8	24.6	12.3	6.1	49.3	61.6	.....
Knox.....	34,627	525	15.1	121.2	14.4	8.6	2.8		5.7		2.8	199.2	98.1	14.5	8.6		31.7	101.0	.....
Lawrence.....	28,104	447	15.9	188.5	24.9	117.4	7.1	3.5	3.5		7.1	149.4	145.8	17.7	14.2	3.5	35.5	96.0	.....
Lawrence.....	15,006	166	11.0	126.6		46.6	13.3					113.2	53.3	33.3	19.9	19.9	13.3	13.3	.....

Ohio.....	4,724	63	13.3	275.1	21.1	63.5	11.2	5.6	16.9	127.0	42.3	21.1	16.9	21.1	03.5
Orange.....	17,724	244	13.7	276.4	28.1	56.4	11.2	5.6	16.9	100.9	67.7	16.9	10.5	45.1	73.3
Perry.....	18,993	249	13.1	194.8	36.8	42.1	5.2	5.2	10.5	89.5	68.4	21.0	10.5	31.5	42.1
Pike.....	21,263	319	15.0	211.6	42.3	61.7	4.7	9.4	9.4	65.8	117.5	42.3	4.7	37.6	94.0
Posey.....	22,655	311	13.7	150.0	35.3	85.3	17.6	28.4	28.4	123.5	70.6	4.4	4.4	44.1	70.6
Ripley.....	20,093	223	11.0	114.4	24.8	29.8	4.9	9.9	9.9	119.4	19.9	4.9	24.8	49.7	74.6
Scott.....	8,497	118	13.8	223.6	53.8	23.5	35.3	3.7	7.5	176.5	82.3	11.7	11.7	35.3	82.3
Spencer.....	22,546	271	12.0	168.5	17.7	35.4	13.3	4.4	4.4	124.1	110.8	26.6	15.1	31.0	44.3
Stillman.....	26,456	447	16.8	158.7	11.3	52.9	34.0	3.7	7.5	181.4	113.3	45.3	15.1	37.7	109.6
Switzerland.....	11,840	179	15.1	211.1	33.9	42.2	20.9	1.3	7.8	143.5	59.1	16.8	33.7	67.5	84.4
Vanderburgh.....	76,553	1,193	15.5	150.2	33.9	32.6	20.9	1.3	7.8	152.8	80.9	15.6	10.4	61.3	57.4
Warrick.....	22,796	310	13.6	109.6	21.9	52.6	21.9	8.7	8.7	175.4	43.2	26.3	4.3	13.1	83.3
Washington.....	19,725	246	12.4	192.6	35.4	60.8	21.9	5.0	5.0	157.1	50.6	35.4	25.3	60.8	55.7

TABLE No. 6.

*Annual Death Rates for Seven Years, 1900 to 1907, with Averages of Cities of 5,000 Population and Over, Compared With Rural and State Rates.*

	Popula- tion.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	Average.
STATE.....	2,658,549	14.2	13.8	12.8	12.2	13.5	13.7	13.5	14.8
CITIES—									
Indianapolis.....	204,622	20.3	16.9	16.2	18.1	17.4	16.0	16.4	17.3
Evansville.....	62,307	15.2	14.5	11.2	14.7	14.9	14.4	15.1	14.3
Fort Wayne.....	49,003	13.1	14.8	14.1	14.8	14.0	13.9	16.3	14.4
Muncie.....	25,309	19.9	16.0	16.7	18.1	17.8	16.0	14.8	17.0
South Bend.....	41,728	16.1	15.0	14.6	19.2	15.9	17.1	16.8	16.4
Terre Haute.....	39,257	16.1	19.1	20.6	18.3	23.1	21.0	22.5	20.1
Anderson.....	23,954	16.5	17.5	16.7	14.6	15.5	12.1	13.3	15.2
Elkhart.....	16,712	16.1	13.2	12.5	14.3	15.4	13.6	14.0	15.1
Elwood.....	17,138	17.4	15.1	14.0	14.7	13.4	11.6	8.4	13.5
Hammond.....	14,896	10.5	14.8	18.1	19.1	15.4	15.2	17.9	15.9
Huntington.....	10,325	12.9	13.4	13.2	16.5	17.1	12.7	13.4	14.6
Jeffersonville.....	10,818	17.5	22.3	19.5	21.7	20.3	17.7	19.7	19.9
Kokomo.....	11,549	16.2	16.0	16.1	20.8	18.5	18.7	20.0	18.0
Lafayette.....	18,864	14.5	16.8	17.9	18.4	21.5	21.6	18.6	18.5
Logansport.....	17,356	15.4	17.5	15.1	15.9	17.6	17.1	16.0	16.4
Marion.....	22,082	16.9	15.8	15.5	17.5	16.6	14.0	13.6	15.7
Michigan City.....	16,478	10.7	14.7	14.5	18.8	14.7	14.1	14.3	14.5
New Albany.....	20,628	17.4	18.0	17.4	16.6	18.1	18.1	16.1	18.2
Paru.....	11,162	12.6	13.0	13.4	12.1	13.3	11.2	13.8	12.8
Richmond.....	18,874	17.4	16.6	18.3	14.0	15.8	14.0	16.1	16.1
Vincennes.....	11,012	12.5	19.2	17.8	15.1	22.2	20.7	20.0	18.6
Alexandria.....	8,823	12.3	16.1	13.9	14.1	11.4	4.4	6.9	11.3
Bedford.....	7,221	10.5	10.9	12.4	11.3	19.5	18.1	18.0	14.4
Bloomington.....	7,437	10.8	11.8	17.3	14.8	16.9	18.9	19.7	15.7
Brasil.....	8,538	7.8	10.0	14.1	8.0	20.0	12.5	12.8	12.1
Columbus.....	8,694	18.4	16.3	15.8	15.8	18.5	14.8	17.1	16.6
Connersville.....	7,751	12.7	16.0	13.2	13.9	17.6	14.8	15.3	14.8
Crawfordsville.....	6,873	17.1	16.4	17.4	13.9	20.5	20.0	20.3	18.0
East Chicago.....	7,500	4.0	6.5	10.1	9.3	12.4	14.5	18.5	10.8
Frankfort.....	7,572	17.3	15.5	14.1	17.0	15.1	20.0	18.7	16.8
Goshen.....	8,521	14.0	10.6	11.8	11.1	12.5	14.0	18.1	13.2
Greensburg.....	5,609	15.8	20.3	17.6	16.9	18.5	16.2	21.2	18.0
Hartford City.....	7,362	8.8	12.2	12.0	11.1	13.0	12.0	8.8	11.1
Laporte.....	7,136	13.1	15.4	13.7	17.3	18.2	17.5	20.7	16.5
Linton.....	9,767	.....	.....	8.6	9.7	12.5	11.8	11.7	10.8
Madison.....	8,936	19.4	16.3	18.0	18.1	17.7	15.0	18.4	17.5
Mishawaka.....	6,436	11.4	10.5	13.8	17.0	19.2	24.3	21.4	16.8
Mt. Vernon.....	5,303	19.0	21.6	22.4	16.0	17.9	18.4	17.9	19.0
Portland.....	5,507	12.8	13.2	16.7	12.1	13.6	14.1	16.7	14.1
Princeton.....	7,227	9.8	11.0	10.9	9.6	15.3	17.2	13.9	12.5
Seymour.....	6,888	14.2	13.9	12.9	13.0	16.1	15.8	15.6	14.5
Shelbyville.....	7,856	12.9	14.2	13.7	14.7	18.5	16.5	16.4	15.0
Valparaiso.....	6,756	11.9	11.9	10.9	13.9	15.6	11.5	12.4	12.6
Wabash.....	9,502	11.3	11.0	13.8	9.8	14.3	12.7	13.0	12.2
Washington.....	9,546	14.9	16.5	14.6	15.5	15.9	14.2	16.5	15.4
Whiting.....	5,500	.....	.....	.....	.....	11.4	10.3	14.1	12.0
Average.....	.....	14.6	15.3	15.3	15.4	16.8	15.8	16.4	15.6
COUNTRY.....	1,666,283	14.3	14.9	13.3	12.9	14.2	13.9	13.3	13.8

# CHART SHOWING

## NORTHERN SANITARY

Total population .....  
Total deaths .....  
Death rate per 1,000 .....  
Consumption, rate per 100,0  
Typhoid, rate per 100,000...  
Diphtheria, rate per 100,000  
Scarlet fever, rate per 100,00  
Diarrheal diseases, rate per

---

## CENTRAL SANITARY

Total population .....  
Total deaths .....  
Death rate per 1,000 .....  
Consumption, rate per 100,0  
Typhoid, rate per 100,000...  
Diphtheria, rate per 100,000  
Scarlet fever, rate per 100,00  
Diarrheal diseases, rate per 10

---

## SOUTHERN SANITARY SECTION.

Total population .....  
Total deaths .....  
Death rate per 1,000 .....  
Consumption, rate per 100,0  
Typhoid, rate per 100,000...  
Diphtheria, rate per 100,000  
Scarlet fever, rate per 100,00  
Diarrheal diseases, rate per  
100,000 .....





TABLE A.

*Births by Months, Color and Nationality of Parents, for the Year Ending December 31, 1906.*

COUNTIES.	1906.												Sex.		Color.						Nationality.						Not Re-ported.			
															White.		Col'd.		American.		Foreign.									
															Males.		Females.		Males.		Females.		Males.		Females.					
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Males.	Females.	Total.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.			Females.	Males.
Adams.....	39	29	39	48	33	49	32	22	42	57	33	32	248	207	455	248	207	425	436	26	16	1	1	95	79					
Allen.....	102	108	138	105	103	102	91	93	79	120	140	106	658	629	1,287	655	627	3	2	1,033	1,068	147	128	95	79					
Bartholomew.....	37	33	43	41	40	38	47	53	43	55	67	30	298	229	527	293	225	5	4	515	520	8	4	1	1					
Benton.....	24	22	27	20	15	18	17	28	10	15	11	34	125	116	241	125	116	232	230	7	9	1	1	1	1					
Blackford.....	23	30	30	43	33	31	33	36	43	23	28	30	218	165	383	217	165	1	...	356	356	19	19	2	2					
Boone.....	22	32	27	34	24	29	34	34	37	26	38	24	201	160	361	200	160	1	...	356	356									
Brown.....	16	21	13	12	5	9	12	9	20	12	7	11	80	67	147	80	67	...	...	144	145	...	...	1	...					
Carroll.....	27	30	22	30	27	21	37	29	30	22	24	19	160	168	328	160	168	...	...	316	319	6	3	3	3					
Cass.....	43	44	33	46	35	35	33	48	28	41	50	39	242	226	468	241	226	1	...	453	452	9	10	2	2					
Clark.....	45	43	46	24	29	30	38	44	42	38	27	25	212	219	431	194	203	18	16	408	422	9	3	9	1					
Clay.....	48	21	38	33	45	40	21	19	16	16	20	29	183	171	354	183	171	...	...	337	343	17	11	3	2					
Clinton.....	47	25	39	45	40	41	34	35	34	41	50	35	254	212	466	254	212	...	...	459	461	1	...	3	2					
Crawford.....	20	16	22	20	18	22	22	18	20	22	20	28	126	122	248	126	122	...	...	157	156	76	79	15	13					
Davies.....	77	51	45	53	55	53	42	52	77	74	57	52	352	339	691	348	336	4	3	678	687	9	6	9	9					
Dearborn.....	29	26	37	38	28	28	32	26	25	24	20	19	155	175	330	154	173	1	2	287	296	9	6	32	26					
Decatur.....	34	24	36	25	33	49	39	24	28	22	40	23	199	178	377	198	178	1	...	367	373	6	2	2	2					
DeKalb.....	19	13	25	50	50	22	25	15	15	20	12	14	121	137	258	121	137	...	...	244	245	13	12	3	2					
Delaware.....	161	102	106	84	72	92	99	73	87	103	105	104	613	575	1,188	601	560	12	15	1,140	1,157	19	13	11	11					
Dubuque.....	16	32	35	25	25	20	61	58	33	27	42	38	219	193	414	219	193	...	...	411	412	2	1	2	2					
Elkhart.....	103	56	61	68	65	48	64	53	29	104	54	35	374	366	730	374	366	...	...	670	677	32	27	20	18					
Fayette.....	18	22	20	13	16	13	26	18	17	44	14	29	127	123	250	125	120	2	3	245	247	2	2	3	2					
Floyd.....	44	33	24	34	34	5	45	27	29	34	33	33	225	165	390	212	159	13	6	369	374	15	11	3	2					
Fountain.....	32	25	27	40	38	21	36	26	27	31	23	22	172	171	343	172	171	...	...	333	338	4	4	5	5					
Franklin.....	18	18	20	18	18	16	18	18	18	21	11	9	116	101	217	116	101	...	...	185	185	13	13	18	18					
Fulton.....	25	23	16	14	14	16	23	21	23	24	21	15	133	104	237	133	104	...	...	234	235	2	1	1	1					

TABLE A—Continued.

COUNTRIES.	1906.												COLOR.				NATIONALITY.				Not Re-ported.				
	Sex.												White.		Col'd.		American.		Foreign.						
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Males.	Females.	Total.	Males.	Females.	Males.	Females.	Fathers.	Mothers.	Fathers.	Mothers.		
Gibson.....	52	48	27	42	43	30	43	49	40	46	34	29	253	230	483	242	221	11	9	470	475	5	12	9	5
Grant.....	23	24	57	43	44	55	120	73	58	52	46	31	336	290	626	334	282	2	8	598	604	14	12	9	5
Greene.....	58	32	47	51	58	42	86	66	57	62	55	29	344	299	643	342	296	2	1	130	131	16	15	4	4
Hamilton.....	62	26	30	43	36	32	44	51	31	77	35	32	265	234	499	262	231	3	3	485	488	5	4	2	2
Hancock.....	18	22	20	34	36	26	14	18	25	19	13	26	132	139	271	132	138	1	1	261	267	5	2	3	3
Harrison.....	48	31	27	38	32	23	28	23	16	33	22	21	182	160	342	180	160	2	2	339	339	2	2	2	2
Hendricks.....	36	29	25	56	19	21	49	38	18	45	14	16	198	168	366	198	167	1	1	360	360	2	2	2	2
Henry.....	43	63	39	40	51	41	43	49	37	44	47	52	280	269	549	273	261	7	8	545	545	11	11	3	1
Howard.....	48	38	38	40	54	33	38	50	26	53	39	25	229	253	482	227	248	2	5	456	458	12	6	2	2
Huntington.....	41	47	57	43	59	54	71	50	72	60	62	44	356	304	660	356	304	2	2	642	648	12	6	2	2
Jackson.....	63	47	40	43	45	41	57	36	52	69	37	32	311	251	562	311	251	1	1	542	549	4	3	6	6
Jasper.....	25	10	15	21	14	20	18	15	21	16	19	13	102	105	207	102	105	1	1	189	199	14	4	3	1
Jay.....	66	49	50	58	71	49	53	57	57	67	45	51	357	316	673	356	314	2	2	647	657	14	6	3	1
Jefferson.....	34	25	25	23	22	19	33	36	27	27	24	21	176	140	316	174	134	2	6	303	307	2	1	5	2
Jennings.....	24	28	22	24	27	37	30	27	31	35	22	26	167	166	333	167	165	1	1	324	326	3	1	1	1
Johnson.....	18	28	12	15	12	20	18	10	16	27	17	28	122	97	219	120	94	2	3	216	216	2	2	1	1
Knor.....	99	99	80	80	87	69	79	91	77	91	73	97	504	518	1,022	495	513	9	5	973	990	36	22	3	3
Kosciusko.....	38	21	57	43	28	58	58	34	23	57	37	35	233	219	452	233	218	1	1	444	444	3	2	1	1
Lagrange.....	42	34	36	31	29	34	41	36	26	28	34	29	202	188	400	202	198	1	1	383	388	13	8	1	1
Lake.....	69	64	72	89	73	42	90	111	44	71	53	45	413	400	813	413	399	1	1	436	460	371	247	1	1
Laporte.....	67	81	46	87	40	57	54	66	62	78	66	71	392	393	775	390	383	2	2	542	569	213	19	6	1
Lawrence.....	39	49	59	64	63	49	59	56	62	64	49	66	346	324	670	346	324	8	8	658	658	69	46	10	7
Madison.....	83	167	84	72	96	59	99	106	80	135	91	124	688	568	1,196	630	557	1	1	1,103	1,129	69	46	10	7
Marion.....	394	346	390	368	361	364	400	413	372	407	361	363	2,328	2,201	4,529	2,130	2,031	198	170	3,999	4,154	481	335	11	2
Marshall.....	41	32	45	42	26	22	37	31	36	47	51	29	251	191	442	251	251	1	1	423	431	16	7	1	1
Martin.....	33	20	17	25	18	25	20	20	20	21	22	16	128	132	270	138	132	1	1	259	264	11	6	4	7
Maul.....	40	21	26	12	13	26	20	20	21	39	19	17	152	168	320	152	168	3	3	297	304	12	4	7	8
Monroe.....	18	13	22	28	25	34	55	44	21	48	28	44	212	183	395	209	177	3	6	393	393	1	1	1	1
Montgomery.....	42	50	41	49	44	40	43	43	43	49	41	39	261	269	530	255	269	6	6	521	523	2	2	2	2



TABLE B.

*Births, Number of Children Born to Each Mother, Grouped Ages of Parents, Still, Plurality and Illegitimate Births, Year Ending December 31, 1906.*

COUNTIES.	Total Births.	NUMBER OF CHILDREN BORN TO EACH MOTHER.												
		First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	Ninth.	Tenth.	Eleventh.	Twelfth and over.	Not reported.
Adams.....	455	106	85	72	50	47	32	20	18	12	5	2	4	2
Allen.....	1,237	339	265	192	137	83	36	61	26	19	12	10	16	17
Bartholomew.....	327	130	131	77	65	36	32	23	9	12	6	4	2	10
Benton.....	241	79	49	36	23	15	11	2	5	1	1	4	4	4
Blackford.....	383	90	82	67	50	50	11	18	16	9	4	1	3	2
Boone.....	361	109	90	48	43	25	25	12	3	2	2	2		
Brown.....	147	33	31	20	12	12	19	6	2	5	3	3	1	
Carroll.....	328	94	74	58	35	16	7	11	8	5	1	3	4	12
Cass.....	468	155	105	83	50	26	15	11	6	9	2	4	1	1
Clark.....	431	146	68	68	43	36	27	11	14	7	4	1	3	
Clay.....	354	77	64	64	49	40	20	17	13	4	2	1	3	
Clinton.....	466	127	105	77	48	35	24	20	16	10	2	1	1	
Crawford.....	248	63	50	45	28	22	15	11	6	6	3			
Davies.....	691	178	126	123	76	56	42	24	30	13	11	4	4	4
Dearborn.....	330	106	63	53	37	27	17	7	7	4	4	1	1	3
Decatur.....	377	116	74	66	51	28	13	10	8	5	3	3		
Delaware.....	258	85	62	36	31	21	7	5	5	3	1	1	1	1
Dubois.....	1,188	371	270	171	125	81	58	36	21	14	7	8	7	19
Dubois.....	414	101	55	68	54	38	33	19	18	12	7	5	3	1
Elkhart.....	730	223	163	123	77	49	34	20	15	6	6	1	3	

Fayette	250	73	60	45	29	15	11	5	3	2	1	1	1	4
Floyd	390	131	88	58	39	24	15	11	9	4	4	4	1	4
Fountain	343	103	68	48	41	26	21	11	7	3	2	3	3	3
Franklin	217	58	43	33	29	18	12	8	7	4	2	3	3	3
Fulton	237	58	55	39	28	21	18	8	1	4	3	1	1	1
Gibson	483	131	103	76	58	26	29	19	11	6	11	3	3	5
Graut	698	166	136	96	77	52	40	22	15	6	11	2	5	5
Greene	643	176	122	111	81	54	31	25	17	6	9	2	4	4
Hamilton	499	140	85	79	55	27	23	20	11	13	9	7	4	4
Hancock	271	79	58	40	32	29	10	11	6	1	1	1	2	1
Harrison	342	86	73	73	43	27	9	7	13	5	3	1	2	2
Hendricks	386	110	75	59	49	23	15	12	12	4	3	3	1	1
Henry	549	169	127	117	62	34	31	12	12	11	4	1	3	3
Howard	482	164	124	67	34	33	25	12	9	8	4	4	3	5
Huntington	600	197	146	102	73	51	30	30	9	2	4	3	3	5
Jackson	582	138	123	88	73	36	33	30	13	9	2	5	1	11
Jasper	207	56	36	35	20	14	9	7	6	3	3	1	3	4
Jay	678	189	137	101	67	50	36	16	20	12	6	4	11	4
Jefferson	316	105	50	35	36	31	13	8	11	4	2	1	1	4
Jennings	353	89	70	49	44	16	26	14	8	4	4	1	3	5
Johnson	219	58	55	38	28	12	11	5	3	3	2	1	8	9
Knox	1,022	261	204	155	114	84	60	42	31	25	12	12	13	13
Kosciusko	452	128	109	80	53	31	20	10	10	6	4	2	3	1
Lagrange	400	111	83	49	50	31	28	18	9	9	4	1	3	4
Lake	813	222	156	124	83	78	42	40	29	10	8	2	13	6
Laporte	775	209	183	121	69	57	24	34	26	10	8	9	7	18
Lawrence	670	188	135	109	78	53	36	30	25	6	3	3	2	3
Madison	1,196	329	264	210	117	79	68	37	25	14	6	6	12	10
Marion	4,529	1,616	1,082	645	405	301	182	127	83	54	36	21	19	8
Marshall	442	107	90	82	54	35	26	18	9	7	9	1	3	1
Martin	270	59	56	37	33	30	14	20	7	4	2	3	2	3
Miami	320	101	60	52	31	19	22	12	11	4	2	1	1	4
Monroe	393	102	95	64	40	30	17	16	12	4	4	2	3	3
Montgomery	530	160	119	70	54	38	39	17	10	7	5	3	4	4
Morgan	245	73	64	35	14	15	16	11	4	1	2	2	4	6
Newton	215	54	44	41	30	21	9	4	2	3	2	1	1	4
Noble	335	95	73	57	30	24	18	12	6	6	3	1	1	4
Ohio	69	25	8	9	7	8	3	1	3	1	2	1	1	4
Orange	225	67	39	32	20	24	15	10	7	5	2	2	2	2
Owen	232	65	41	40	26	28	13	8	6	1	1	2	2	2

TABLE B—Continued.

COUNTIES.	Total Births.	NUMBER OF CHILDREN BORN TO EACH MOTHER.										
		First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.	Ninth.	Tenth.	Eleventh.
Parke.....	288	81	74	42	32	19	18	10	.....	5	4	1
Perry.....	245	91	65	69	35	26	17	18	10	7	2	1
Pike.....	413	105	98	64	41	33	18	20	13	13	4	3
Porter.....	221	80	36	41	17	12	14	13	11	5	4	1
Posey.....	451	138	99	67	33	34	29	19	11	10	3	4
Pulaski.....	148	39	31	19	18	12	9	5	5	5	2	2
Putnam.....	407	115	83	63	54	36	21	15	7	8	2	.....
Randolph.....	690	183	129	92	53	39	34	19	14	8	7	3
Ripley.....	285	81	64	33	31	23	16	17	6	2	4	.....
Rush.....	292	84	64	40	24	26	20	13	7	4	.....	1
Scott.....	173	41	25	40	18	18	7	10	6	4	1	.....
Shelby.....	347	105	77	62	39	22	19	8	6	4	2	.....
Spencer.....	229	50	32	31	31	16	12	11	6	4	4	.....
Starke.....	140	30	25	27	13	16	7	4	2	2	2	.....
Steuben.....	146	57	29	25	15	6	6	4	3	.....	1	.....
St. Joseph.....	1,718	494	365	259	178	121	98	59	50	32	25	11
Sullivan.....	433	135	129	86	36	15	19	9	3	.....	.....	19
Switzerland.....	145	41	29	25	10	11	10	9	8	3	2	1
Tipton.....	488	169	117	67	54	21	19	11	5	3	7	5
Tippecanoe.....	346	85	75	56	36	27	19	14	11	6	5	.....
Union.....	100	29	24	18	13	10	2	2	2	.....	.....	.....
Vanderburgh.....	1,422	433	318	205	145	96	65	49	45	22	14	10
Vermillion.....	347	81	72	61	44	29	26	9	13	4	1	3
Vigo.....	1,306	436	316	205	147	93	61	57	27	17	17	8

Not reported.

Twelfth and over.

Wabash.....	448	129	96	79	46	36	21	13	12	4	5	4	1	3
Warren.....	180	55	37	26	18	11	3	6	1				1	2
Warrick.....	416	111	79	63	54	34	16	20	13	7	7	7	1	2
Washington.....	218	44	44	32	25	25	12	8	9	5	4	4	6	4
Wayne.....	731	244	198	93	57	46	22	20	16	15		2	1	6
Wells.....	424	124	103	55	48	30	20	17	10	5	3	1	2	1
White.....	431	116	101	64	41	29	30	17	11	9	7	1	2	3
Whitley.....	105	39	16	18	9	9	4	4	2	1	2	1	2	3
Grand total.....	45,300	13,210	9,779	7,059	4,841	3,333	2,352	1,627	1,128	685	433	254	306	283







TABLE B—Continued.

		General Ages of Parents.												Sub- birds.		Family birds.		Illegitimate birds.										
		Under 20.			20 to 29.			30 to 40.			40 to 50.									50 to 60.			60 to 70.			70 to 80.		
		Fathers.	Mothers.		Fathers.	Mothers.		Fathers.	Mothers.		Fathers.	Mothers.								Fathers.	Mothers.		Fathers.	Mothers.		Fathers.	Mothers.	
Parke.	7	24	122	157	68	76	35	15	15			2			4	1	4	3	3	5	5	2	1	2	1	2	1	0
Perry	4	41	153	194	127	98	40	10	10			1			15	7	2	2	2	1	1	2	2	2	2	2	2	1
Pike	5	55	181	217	128	102	69	26	11																			9
Porter	3	20	99	121	72	58	21	20	13			1																4
Poey	2	45	190	257	173	129	63	18	10			2			11	2	12	6	6									0
Pulaski.	1	14	56	78	42	31	31	13	3			1			12	12	4	4	4									1
Putnam	5	47	154	222	153	111	62	20	16			1			13	3	8	8	2									3
Randolph	14	87	202	333	192	141	70	30	3			3			11	3	11	4	4									4
Ripley															284	284	2	2	2									0
Ruab.	1	31	128	144	111	95	40	14	8			1			6	6	3	3	3									1
Scott	3	18	56	87	68	53	22	9	2						7	3	2	2	3									2
Shelby	5	48	156	187	131	92	34	13	9						8	3	1	1	2									4
Spencer	1	11	76	114	90	77	32	10	9			1			16	13	1	1	1									3
Marko	2	14	53	67	49	47	25	9	6						6	6	1	1	2									1
Neulen.	2	18	68	78	54	39	13	3	1						6	6	1	1	2									1
St. Joseph	10	127	744	987	700	524	221	65	12			2			16	3	6	1	1									7
Sullivan	1	190	365	168	98	57	16	18	2						1	1	3	3	1									6
Switzerland.	2	14	54	65	55	50	22	11	2						9	4	2	2	2									10
Tippecanoe.	4	62	219	231	154	123	50	16	11			2			43	51	8	6	2									1
Tipton.	5	40	167	197	113	89	40	9	0			1			6	6	6	3	6									4
Union.	8	50	39	50	44	39	15	3	1			1																14
Vanderburgh.	26	167	552	743	539	408	205	62	43			1			22	4	20	17	16									18
Vermillion.	3	42	135	166	128	119	47	5	25			3			21	13	4	4	3									3
Vigo.	14	167	636	746	533	416	172	54	26			4			10	1	30	30	13									13

Wabash.....	3	54	192	238	161	125	57	15	11	1	17	10	11	10	7	5	3	5
Warren.....	18	22	61	92	69	39	25	5	2	1	1	1	4	1	2	2	1	1
Warrick.....	2	32	100	192	182	144	64	46	12	2	3	1	9	1	2	1	1	1
Washington.....	2	23	101	115	69	63	32	17	9	1	3	1	3	1	2	1	1	1
Wayne.....	23	46	330	398	284	238	68	45	8	2	8	2	5	11	8	12	8	6
Wells.....	7	59	188	235	164	115	48	12	6	1	8	1	1	3	2	2	6	5
White.....	1	39	179	222	169	141	59	18	8	1	6	2	1	4	2	2	6	5
Whitely.....	1	14	59	56	37	31	7	3	1	1	1	1	7	3	9	5	3	3
Grand total.....	648	4,795	19,606	24,168	16,386	12,804	5,891	2,121	928	23	111	11	1,283	864	455	407	420	37

TABLE C.

## Marriages by Months, Color and Nationality, Year Ending December 31, 1906.

COUNTIES	1905.												NATIONALITY.				Total.			
													Color.		American.			Foreign.		Not Reported.
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	White.	Colored.	Grooms.	Brides.		Grooms.	Brides.	
Adams	18	13	20	14	15	8	17	14	13	32	16	21	201	8	188	190	13	11	201	
Allen	46	37	45	59	47	75	64	54	45	45	86	60	655	8	612	620	49	42	2	1
Bartholomew	23	11	16	22	18	25	22	21	26	18	23	18	241	4	240	243	5		2	
Benton	13	24	12	3	5	11	5	8	7	8	1	9	105	1	102	102	4	4		
Blackford	10	11	16	13	15	23	10	12	14	7	14	21	164	2	158	161	8	5		
Bloomington	26	15	9	25	8	19	6	13	34	28	20	26	227	2	229	229				
Brown	7	8	5	9	4	2	2	3	6	3	4	9	62		62	62				
Carroll	11	11	19	13	8	9	6	8	10	17	9	17	138		137	138	1			
Cass	22	23	16	20	26	34	24	34	24	34	29	21	316	1	313	316	3		1	1
Clark	37	24	14	47	22	53	71	64	65	77	74	24	504	78	572	575	8	6	2	1
Clay	16	20	20	40	17	31	9	30	47	37	48	28	352	1	337	345	16	8		
Clinch	26	28	25	21	17	28	17	17	40	27	27	43	313	3	314	315	1		1	1
Crawford	12	10	14	12	8	14	14	12	13	18	20	24	171		115	115	37	31	19	17
Daviess	11	17	20	19	10	27	18	12	19	42	24	16	235		235	235				
Deareshorn	17	20	13	21	16	26	12	19	15	11	31	8	216	2	216	218	2			
Deratur	14	20	17	4	14	12	16	23	21	14	12	24	189	2	188	191	3			
DeKalb	14	20	19	10	14	32	21	8	20	20	20	30	243		242	243	1	1		
Delaware	72	27	31	62	33	53	74	37	36	88	30	59	599	22	604	605	7	6		
Dubois	11	9	8	18	23	11	8	16	15	6	15	7	142		129	130	10	8	3	4
Elkhart	48	28	43	49	32	34	50	23	33	60	51	43	493	1	455	463	24	17	14	14

Fayette	7	9	7	18	11	19	5	11	7	12	11	12	124	126	128	3	1	129
Floyd	20	15	24	14	23	35	24	23	28	32	21	30	264	262	264	7	5	269
Fountain	8	14	15	13	8	24	9	10	16	18	14	20	177	176	177	1	3	177
Franklin	12	12	10	13	11	9	5	17	11	18	7	7	125	109	108	13	2	125
Fulton	13	17	18	12	6	8	11	14	17	20	21	11	168	165	168	3	3	168
Gibson	13	18	17	10	15	15	14	21	28	19	17	17	198	208	211	3	1	211
Grant	45	50	27	48	30	53	62	37	58	52	38	62	542	547	554	13	5	561
Greene	18	21	35	10	11	16	18	25	49	11	16	38	298	194	194	74	74	268
Hamilton	25	18	20	14	17	22	18	24	26	28	20	29	251	258	260	3	1	261
Hancock	15	16	16	18	15	18	13	13	24	21	14	12	194	194	195	1	1	195
Harrison	15	17	14	14	13	17	8	11	10	11	9	9	146	148	148	3	1	148
Hendricks	9	12	8	15	8	7	10	9	7	24	14	27	148	147	149	3	1	150
Henry	21	14	17	17	14	20	15	25	23	30	20	28	255	259	259	2	2	261
Howard	8	20	19	25	32	36	38	29	33	45	27	33	339	330	339	13	6	345
Huntington	41	2	22	24	12	28	18	25	24	27	21	15	259	254	259	5	2	259
Jackson	18	28	21	20	20	21	17	20	23	31	22	28	266	268	268	3	1	269
Jasper	14	11	7	4	5	5	16	7	8	9	10	9	105	92	92	13	13	105
Jay	24	23	13	30	15	18	21	27	21	27	25	32	271	274	273	1	1	276
Jefferson	25	16	18	23	18	22	14	24	16	16	21	29	238	240	242	2	2	243
Jennings	24	14	7	15	10	6	15	9	7	15	11	8	139	136	140	4	1	141
Johnson	13	19	9	12	8	18	12	14	26	20	16	25	185	192	192	3	3	192
Knox	23	42	21	28	19	34	35	32	28	43	33	51	385	378	382	11	3	389
Kosciusko	16	14	30	19	12	24	21	23	26	32	31	37	285	276	282	8	2	285
Lagrange	16	16	7	8	14	14	5	7	9	5	14	19	126	126	126	2	2	128
Lake	111	122	73	28	42	47	71	73	38	147	146	128	1,011	617	643	407	383	1,026
Laporte	25	23	11	25	28	53	29	24	39	50	47	27	390	325	338	55	41	381
Lawrence	19	22	19	27	16	21	15	25	27	59	18	20	258	258	258	1	1	258
Madison	46	32	61	70	84	70	43	60	77	84	35	64	690	665	654	35	23	700
Marion	119	208	213	158	166	309	282	122	241	269	321	193	2,327	2,408	2,498	163	103	2,571
Marshall	16	10	20	19	11	14	15	7	14	36	19	27	198	194	195	4	3	198
Martin	6	5	10	9	3	5	10	7	15	17	9	9	105	84	93	21	12	105
Miami	11	20	20	30	18	22	21	28	25	25	27	21	273	260	264	13	7	273
Monroe	19	10	22	22	23	15	16	23	14	18	47	26	245	256	256	11	2	256
Montgomery	16	16	22	17	10	21	10	25	31	32	23	46	249	249	250	2	4	256
Morgan	16	14	24	10	8	21	19	20	25	20	18	27	221	219	222	3	3	222
Norton	6	9	9	8	6	8	4	6	13	23	12	7	87	84	83	4	4	88
Noble	11	5	8	5	13	17	14	13	12	6	25	16	180	174	178	6	2	180
Ohio	31	5	2	14	7	.....	3	5	8	8	15	16	136	143	143	139	139	143
Orange	31	5	2	14	7	.....	3	5	8	8	15	16	136	143	143	139	139	143
Owen	18	30	6	18	5	6	15	9	11	22	14	9	163	136	136	27	27	163

TABLE C—Continued.

COUNTRY.	1908.												Color.		NATIONALITY						Total		
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	White.	Colored.	American.		Foreign.		Not Reported.				
															Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.		Grooms.	Brides.
Parke.....	16	16	13	26	11	16	19	19	16	23	23	11	199	4	103	106	10	6	1	203			
Perry.....	12	7	12	7	11	11	7	13	18	14	19	17	132	11	139	140	3	3	1	143			
Pike.....	23	12	19	15	14	10	13	13	7	14	21	24	185	..	183	185	2	..	..	185			
Porter.....	23	12	17	12	8	14	14	15	10	17	8	7	157	..	187	144	20	13	..	187			
Posey.....	12	10	12	16	20	19	13	30	16	33	20	26	214	13	227	227	..	..	..	227			
Pulaski.....	11	18	6	1	8	7	7	3	4	..	11	13	88	..	84	86	3	2	1	88			
Putnam.....	14	11	6	5	10	15	12	16	21	26	19	15	168	2	169	169	1	1	..	170			
Randolph.....	32	21	19	24	19	20	24	12	26	26	35	26	281	3	282	283	2	1	..	284			
Ripley.....	18	15	11	9	12	11	8	9	16	25	11	13	158	..	158	158	..	..	158	158			
Rush.....	9	16	7	7	14	12	8	11	11	21	14	20	147	3	150	150	..	..	..	150			
Scott.....	9	13	9	6	5	6	4	2	8	2	11	15	90	..	90	90	..	..	1	90			
Shelby.....	26	18	20	21	11	22	22	24	26	23	17	33	263	3	263	263	..	1	..	263			
Spencer.....	19	13	16	18	18	19	14	17	16	22	22	21	199	16	214	214	1	..	1	213			
Stark.....	10	4	11	7	5	10	1	5	11	12	14	5	95	..	53	57	40	36	2	103			
Steuben.....	16	10	15	22	6	12	11	8	16	15	15	14	160	..	158	159	2	1	..	160			
St. Joseph.....	49	40	81	40	50	105	63	93	85	90	73	45	771	13	631	656	151	128	2	784			
Sullivan.....	34	20	23	29	21	24	26	28	17	33	36	44	355	..	344	344	11	11	..	355			
Switzerland.....	14	10	3	5	5	6	6	6	6	4	5	12	81	..	81	81	..	..	..	81			
Tipppecanoe.....	26	34	22	19	25	30	23	31	35	48	21	19	346	6	335	332	17	20	..	353			
Tipton.....	15	20	17	15	9	13	10	16	15	19	8	17	174	..	170	173	4	1	..	174			
Union.....	4	4	1	2	3	7	3	5	5	3	3	4	44	..	44	44	..	..	..	44			
Vanderburg.....	50	61	45	78	81	75	108	105	83	114	116	101	857	119	857	886	80	46	34	966			
Vermillion.....	13	11	18	15	10	12	11	10	10	13	15	16	134	..	134	136	23	21	..	156			
Vigo.....	87	84	85	100	104	112	57	77	86	81	93	73	905	54	939	936	63	51	7	1,009			

Wabash.....	37	21	16	24	17	16	31	14	15	32	28	15	263	3	202	202	3	3	1	1	206
Warren.....	5	5	5	6	7	7	8	9	8	14	7	9	90		80	90	1			90	
Warrick.....	18	22	10	12	11	15	25	13	9	15	18	17	180	5	185	185				185	
Washington.....	10	20	16	7	5	10	8	15	16	16	13	25	161		161	161				161	
Wayne.....	16	19	22	24	27	35	37	34	44	42	41	41	346	36	374	372	6	7	2	3	392
Wells.....	23	14	20	64	8	21	22	6	14	27	20	26	265		265	264		1			265
White.....	14	21	14	7	6	9	4	6	15	17	13	16	142		24	25	1	117	117		142
Whitley.....	10	15	19	14	13	8	8	6	11				110		100	100	1	1		110	110
Grand Total.....	2,064	1,996	1,870	2,064	1,675	2,366	2,063	1,967	2,286	2,762	2,587	2,496	25,396	887	24,144	24,452	1,463	1,131	618	642	26,225



TABLE D.  
*Marriages, Grouped Ages, for the Year Ending December 31, 1906.*

COUNTIES.	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 and Over.		Not Reported.		Total.
	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	
Adams.....	2	61	161	125	31	13	7	24	16	9	11	2	1	2	2	2	2	2	201
Allen.....	4	100	457	430	124	97	48	6	7	4	1	3	3	1	2	1	1	1	663
Bartholomew.....	2	56	175	155	46	20	11	6	6	6	7	3	3	1	1	1	1	1	245
Benton.....	3	9	72	85	21	10	7	5	1	1	2	1	2	1	3	3	3	3	106
Blackford.....	3	37	116	75	27	10	10	5	8	3	2	1	1	1	1	1	1	1	166
Boone.....	9	64	155	121	29	22	16	7	7	10	5	1	6	1	1	1	2	2	229
Brown.....	6	30	42	25	8	4	3	2	1	3	1	3	1	1	1	1	1	1	62
Carroll.....	2	42	105	75	17	11	9	6	4	4	3	1	1	1	1	1	1	1	138
Cass.....	30	73	200	180	61	45	14	13	6	3	3	1	2	1	1	1	1	1	317
Clark.....	2	105	385	128	70	45	45	21	11	6	5	3	2	2	4	4	4	4	582
Clay.....	17	112	247	183	60	35	14	15	6	4	6	3	2	1	1	1	1	1	353
Clinton.....	15	104	217	161	50	32	13	10	13	6	5	3	3	2	3	3	3	3	316
Crawford.....	88	79	36	41	16	20	11	14	11	9	7	5	2	3	1	1	1	1	171
Davies.....	5	56	174	147	33	20	15	8	5	2	2	2	1	1	2	2	2	2	235
Dearborn.....	3	44	145	137	50	28	12	6	5	2	1	1	1	1	1	1	1	1	218
Deatur.....	1	50	136	109	36	20	6	4	8	3	3	2	1	2	1	1	1	1	191
Delaware.....	2	48	171	148	41	23	17	9	7	6	4	2	2	1	1	1	1	1	243
Dubois.....	20	200	411	313	119	60	32	25	18	8	8	5	3	3	3	3	3	3	611
Dubois.....	4	31	110	91	15	7	5	5	1	1	3	4	1	1	1	1	1	1	142
Elkhart.....	8	83	331	310	92	54	22	24	17	16	10	5	4	4	1	1	1	1	494
Fayette.....	6	30	88	77	24	14	5	2	2	5	3	1	1	1	1	1	1	1	129
Floyd.....	5	55	182	176	63	39	23	11	8	5	6	1	1	1	2	2	2	2	299
Fountain.....	6	52	119	95	31	16	9	9	6	3	3	2	2	1	1	1	1	1	177
Franklin.....	31	81	31	76	26	11	12	6	4	1	1	1	1	1	1	1	1	1	135
Fulton.....	4	48	109	89	31	12	14	11	7	4	2	3	1	1	1	1	1	1	168



TABLE D—Continued.

COUNTIES.	Under 20.		20 to 30.		30 to 40.		40 to 50.		50 to 60.		60 to 70.		70 to 80.		80 and Over.		Not Reported.		Total.
	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	Grooms.	Brides.	
Ripley	4	31	102	104	34	11	5	1	4	2	1				1		158	158	158
Rush	6	33	158	143	14	4	5	1	1	2					1				160
Scott	2	82	180	148	53	30	10	14	7	7	3				1		2	2	190
Shelby	3	37	141	146	49	24	14	3	4	2	1	2	2				2	1	263
Spencer																	1	1	213
Stark		22	75	61	10	6	3	1	4	5	2		1						95
Steuken	1	41	107	96	23	19	12	9	6	3	3		1		1		1	1	180
St. Joseph	10	132	547	514	156	74	46	26	10	13	6	1	4		5		5	4	784
Sullivan	1	169	291	130	39	38	14	11	8	7	1	1	1						353
Switzerland	3	27	67	44	7	7	1	1	2	1	1								81
Tippecanoe	9	56	222	220	61	44	21	10	12	12	16	2	9	2	2		2	6	332
Tipton	19	67	115	85	25	12	5	5	7	5	3		1						174
Union	29	11	29	25	11	5	1	2	2				1						44
Vanderburgh	47	192	563	534	233	162	78	61	29	14	12	1	1		4		4	2	966
Vermillion	5	51	97	88	41	12	8	5			3								156
Vigo	44	204	612	552	233	164	65	53	33	30	16	2	3	1	3		3	3	1,009
Wabash	7	62	194	160	42	26	11	11	8	4	3	2			1		1	1	266
Warren	2	37	63	40	16	7	6	4	2	2	1								90
Warrick	3	45	131	106	35	23	6	7	7	1	3	3	1						186
Washington	6	53	114	87	19	10	13	6	4	3	3	1			1		1	1	161
Wayne	8	62	246	251	83	42	26	16	12	11	6		1						382
Wells	16	86	195	144	32	17	11	8	9	4	1	1	1		1		2	2	265
White	1	26	95	85	33	17	4	2	3	5	3	1	1				1	2	142
Whitley	3	20	57	79	16	6	3	3			1							1	110
Grand Total	781	6,355	17,370	14,899	4,839	2,904	1,637	1,070	788	506	417	162	131	35	14	2	248	222	26,225

## INDEX.

	Page
American Tuberculosis Exhibition.....	28
American Tin Plate Company.....	44
Annual Health Officers' School.....	37
Annual Health Officers' School.....	81
Avon Sanitary Survey of Schoolhouse.....	48
Proclamation of Condemnation.....	49
Proposal for Co-operation.....	49
Second Sanitary Survey.....	74
Summary .....	48
 Bacteriological and Pathological Laboratory—	
Bacteriological Examinations by Months.....	416
Character of Work and Aims.....	414
Diphtheria Serum .....	62
Diphtheria Examinations by Counties.....	428
Diphtheria Examinations by Months.....	429
Examinations of Specimens.....	418
Letter to Medical Societies.....	61
Method of Keeping Records.....	60
Organization of Laboratory Proper.....	62
Report for First Calendar Quarter of 1906.....	60
Report from Division of Bacteriology and Pathology.....	415
Sputum Examinations by Counties.....	426
Sputum Examinations by Months.....	429
Statistical Table of Work Done.....	64
Summary .....	423
Supplies Shipped Out.....	419
Typhoid Fever Observations.....	63
Widal Examinations of Blood for Suspected Typhoid Fever, by Counties .....	424
Widal Examinations by Months.....	429
 Board Meetings—	
First Quarter—Special Meeting.....	24
Regular Meeting .....	25
Special Meeting .....	44
Regular Meeting .....	52
Special Meeting .....	66
Regular Meeting .....	84
Regular Meeting .....	97
 Butchers—Prosecution of .....	113
Results of Examinations of Food Samples.....	114

	Page
Cambridge City, Account of Public Health Affairs.....	33
Cambridge City, Account of Typhoid Fever.....	34
Chart No. 1—Principal Causes of Death.....	437
Chart No. 2—Tuberculosis—All Forms .....	439
Chart No. 3—Comparison by Ages.....	439
Chart No. 4—Pulmonary Tuberculosis by Months.....	441
Chart No. 5—Pulmonary Tuberculosis by Ages.....	441
Chart No. 6—Pneumonia by Months.....	447
Chart No. 7—Pneumonia by Ages.....	447
Chart No. 8—Typhoid Fever by Months.....	451
Chart No. 9—Typhoid Fever by Ages.....	451
Chart No. 10—Diphtheria by Months.....	455
Chart No. 11—Diphtheria by Ages.....	455
Chart No. 12—Scarlet Fever by Months.....	457
Chart No. 13—Scarlet Fever by Ages.....	457
Chart No. 14—Diarrhoeal Diseases Under Five Years, by Months....	459
Chart No. 15—Diarrhoeal Diseases Over Five Years, by Months....	459
Chart No. 16—Diarrhoeal Diseases by Ages.....	461
Chart No. 17—Influenza by Months.....	463
Chart No. 18—Influenza by Ages.....	463
Chart Showing Death Rates from Cancer, Typhoid and Tuberculosis	
Chart Showing Deaths from Violence by Months, with Averages....	467
Chemical Laboratory—	
Analyses Made .....	43
Disposal of Sewage.....	60
Necessity for a Specific Milk Law.....	59
Outline of Proposed Work.....	58
Public and Private Water Supplies.....	59
Report for First Calendar Quarter of 1906.....	57
Samples Examined .....	57
Suggestions for New Legislation.....	59
Circular Sent to County Medical Societies.....	66
Columbia City Address to County Medical Society.....	106
Columbus Water Supply and Sanitary Reforms.....	27
Connersville, Account School Hygiene.....	54
Connersville, Meeting of Sixth Councilor District of Physicians.....	53
Cancer—Summary of .....	471
Chart Showing Deaths by Months, with Averages.....	471
Dairies—Inspection of—	
Dairy of Mr. Sidener.....	95
Dairy of Mr. Paul Tucker.....	95
DePauw Farm .....	94
Forest Hill Dairy.....	95
Deaths and Diseases in Indiana During Quarter.....	113
Decatur, Account Tuberculosis Exhibit.....	103
Delphi, Public Sanitary Works.....	34
Diphtheria—Summary .....	453
Table of Deaths by Months for Seven Years.....	454
Table of Deaths by Ages for Seven Years.....	454

	Page
Diarrhoeal Diseases Under Five Years of Age—	
Table of Deaths by Months for Seven Years.....	458
Diarrhoeal Diseases Five Years of Age and Over—	
Table of Deaths by Months for Seven Years.....	458
Table of Deaths by Ages for Seven Years.....	460
Disease Prevalence by Months.....	472
Eminence, Report of Inspection of Schoolhouse.....	89
Epidemic of Typhoid Fever at Cambridge City.....	34
Epidemic of Typhoid Fever at Greencastle.....	92
Evansville, to Deliver Lecture.....	54
Financial Statement—	
Department of Health.....	12
Laboratory of Hygiene.....	16
Greencastle, Inspection of Dairies.....	94
Greencastle, Typhoid Fever Epidemic.....	92
Greensburg, Account Tuberculosis Exhibit.....	102
Ham, Peddling—	
Warning to Health Officers.....	51
Health Officers' School.....	37
Health Officers' School.....	81
Program .....	86
Hygiene Laboratory—	
Examinations Made .....	42
Indiana State Board of Health—	
Annual Report to Governor.....	5
Epidemics .....	6
Pollution of Streams, Water Supplies and Sewers.....	9
Pure Food and Drug Law.....	11
Recommendations .....	7
Registration Law .....	7
Sanitary Schoolhouses .....	8
State Hospital for Indigent Consumptives.....	8
State Laboratory of Hygiene.....	7
Transactions and Work of the Board.....	5
Vital Statistics .....	6
Inspection of Schoolhouses—	
Avon .....	48
Avon—Second Survey .....	74
Clayton .....	46
Eminence .....	89
Kennard .....	73
Kent .....	78
Madison—Upper Seminary .....	79
Madison—Walnut Street School.....	80

	Page
Madison—Fulton School .....	79
Monroeville .....	85
Monument City .....	70
New Britton .....	125
Petersburg .....	99
Rock Creek Center.....	71
Spiceland .....	87
Valley Mills .....	68
West Newton .....	67
Wingate .....	44
Influenza—Table of Deaths by Months for Seven Years.....	462
Influenza—Table of Deaths by Ages for Seven Years.....	462
Inspection of Dairies at Greencastle.....	94
Inspection of Slaughter Houses.....	117
 Kennard, Sanitary Survey of Schoolhouse.....	 73
Kent, Sanitary Survey of Schoolhouse.....	78
Kokomo, Account Smallpox.....	27
Kokomo, Account of Meeting County Superintendent.....	101
 Laboratories—	
Examinations Made in Bacteriological and Pathological.....	42
Analyses Made in Chemical Department.....	43
Lafayette, Account of Diagnosis of Smallpox.....	34
Lebanon, Boone County Teachers' Association.....	53
Letter from Lederle Antitoxin Laboratories.....	126
Letter from Surgeon General Wyman.....	65
 Madison, Sanitary Survey of Fulton Schoolhouse.....	 79
Madison, Sanitary Survey of Upper Seminary.....	79
Madison, Sanitary Survey of Walnut Street School.....	80
Madison, Tuberculosis Exhibit.....	106
Meetings of the Board—	
Special Meeting .....	24
Regular Meeting .....	25
Special Meeting .....	44
Regular Meeting .....	52
Special Meeting .....	82
Regular Meeting .....	84
Regular Meeting .....	97
Merom, Account Lecture and Tuberculosis Exhibit.....	103
Michigan City, to Deliver Lecture.....	86
Middletown, Suspected Ptomaine Poisoning.....	40
Monroeville, Inspection of Schoolhouse.....	85
Monument City, Sanitary Survey of Schoolhouse.....	70
Monticello, Lecture to County Teachers' Institute.....	104
Mooresville, Account Smallpox.....	27
Muncie, Lecture Before State Charities Conference.....	112
Muncie, Paper Before Indiana State Federation of Women's Clubs...	112

	Page
<b>National Pure Food Law—</b>	
Resolution Concerning .....	24
New Castle, Address to Teachers' Institute.....	103
Noblesville, Lecture on School Hygiene.....	103
New Britton, Survey Schoolhouse.....	125
 Order Concerning Inspection of Slaughter Houses.....	 83
Ottawa Tent Colony.....	105
 Papers Read Before Health Officers' School.....	 37-39
Permits—Renewal of .....	96
Peru, Illustrated Lecture on Tuberculosis.....	107
Petersburg Schoolhouse Petition.....	100
Proclamation of Condemnation of Schoolhouses—	
Avon .....	49
Clayton .....	47
Kennard .....	74
Pneumonia—Summary of .....	445
Table of Deaths by Months for Seven Years.....	446
Table of Deaths by Ages for Seven Years.....	446
Monthly Analysis of.....	448
Principal Causes of Death for Last Seven Years.....	436
Kent .....	78
Madison, Fulton Schoolhouse.....	80
Madison, Upper Seminary.....	79
Madison, Walnut Street School.....	80
Monument City .....	71
New Britton .....	125
Petersburg .....	124
Rock Creek Center.....	72
Spiceland .....	88
Valley Mills .....	69
West Newton .....	68
Wingate .....	44
Proposal of Co-operation of Geological Survey—	
Letter from Hydrographic Branch.....	49
Prosecution of Butchers.....	113
 Regular Meeting of Board, First Quarter.....	 25
Regular Meeting of Board, Second Quarter.....	52
Regular Meeting of Board, Third Quarter.....	84
Regular Meeting of Board, Fourth Quarter.....	97
Report of Typhoid Fever Epidemic at Cambridge City.....	34
Report of Investigation of Suspected Potomac Poisoning at Middle- town .....	 40
Report of Secretary for First Quarter.....	25
Report of Secretary for Second Quarter.....	52
Report of Secretary for Third Quarter.....	84
Report of Secretary for Fourth Quarter.....	97



	Page
Report of Chemical Laboratory for First Quarter.....	57
Report of Bacteriological Laboratory for First Quarter.....	60
Report of Indiana State Board of Health to the Conference of State and Provincial Boards of Health.....	81
Renewal of Permits to the J. T. Polk Co.....	96
Resolution Concerning the National Pure Food Law.....	24
Richmond, in Regard to Sanitary Survey of White River.....	107
Richmond, to Deliver Lecture.....	86
Richmond Water Supply—	
Report of Examination.....	108
Cooper Well .....	108
The Hill Gallery.....	109
The Gorman Gallery.....	109
The White Gallery.....	109
The Reservoir .....	110
Summary .....	110
Analyses of Water from Water Works.....	111
Rochester, Account Lecture on Tuberculosis.....	111
Rock Creek Center, Survey of Schoolhouse.....	71
Resignation of Dr. T. Victor Keene.....	125
Rushville, to Confer with County Superintendent.....	53
Registration Report for 1906.....	433
Record of Births.....	433
Record of Marriages.....	434
Record of Deaths.....	434
Principal Causes of Death for Seven Years.....	436
Smallpox at Kokomo.....	27
Smallpox at Lafayette.....	34
Smallpox at Mooresville.....	27
Smallpox for Quarter Ending June 30, 1906.....	85
Smallpox—Table of Deaths by Months for Seven Years.....	464
Monthly Analysis of.....	464
Schoolhouses—Sanitary Survey of—	
Avon .....	48
Avon—Second Survey .....	74
Clayton .....	46
Kennard .....	73
Kennard .....	99
Madison—Fulton Schoolhouse .....	79
Madison—Upper Seminary .....	79
Madison—Walnut Street School.....	80
Monroeville .....	85
Monument City .....	70
New Britton .....	125
Petersburg .....	124
Rock Creek Center.....	71
Spiceland .....	87
Valley Mills .....	68

	Page
West Newton .....	87
Wingate .....	44
Shelbyville, in Regard to Sanitary Affairs.....	85
Slaughter Houses—Inspection of.....	117
Ordinance Regulating Meat Supply.....	118
Regulations .....	118
Scarlet Fever—Table of Deaths by Months for Seven Years.....	456
Scarlet Fever—Table of Deaths by Ages for Seven Years.....	456
 Tuberculosis Deaths by Months for Seven Years.....	 440
Tuberculosis Deaths by Ages for Seven Years.....	440
Tuberculosis Death Rates Per 100,000, by Counties.....	442
Tuberculosis—Summary of .....	438
Tuberculosis Deaths—Monthly Analysis of.....	442
Typhoid Fever Summary.....	449
Monthly Analysis of.....	451
Table of Deaths by Months for Seven Years.....	450
Table of Deaths by Ages for Seven Years.....	450
Table I.—Deaths, all Causes, with Rates.....	475
Table II.—Deaths, all Causes, by Months, Ages, Color, Nationality, etc.....	480
Table IIA.—Recapitulation of Table II.....	501
Table III.—Deaths by Counties, Months, Ages, Color, Sex, etc.....	504
Table IV.—Deaths by Geographical Sections.....	534
Table V.—Death Rates from Important Causes by Geographical Sections .....	538
Table VI.—Death Rates of Principal Cities and Country for Seven Years .....	542
Table A.—Births by Months, Color, Sex, etc.....	543
Table B.—Births—Number of Children Born to Each Mother.....	546
Table B.—Grouped Ages of Parents, Still, Plurality and Illegitimate..	550
Table C.—Marriages by Months, Color and Nationality.....	554
Table D.—Marriages—Grouped Ages .....	558
Third Annual Health Officers' School.....	37
Tuberculosis Exhibition .....	28
Tuberculosis Meeting at South Bend.....	99
Tuberculosis—	
National Association for Study and Prevention of.....	121
Typhoid Fever Epidemic at Cambridge City.....	34
 Violence—Record of Deaths by Months.....	 468
Visits of Secretary—	
Cambridge City .....	33
Columbia City .....	106
Columbus .....	27
Connersville .....	53
Decatur .....	103
Delphi .....	34
Evansville .....	54
Greensburg .....	102

	<b>Page</b>
Kokomo .....	27
Kokomo .....	101
Lafayette .....	34
Lebanon .....	53
Madison .....	106
Merom .....	103
Michigan City .....	86
Monroeville .....	85
Monticello .....	104
Mooreville .....	27
Muncie .....	112
New Castle .....	103
New York .....	28
Noblesville .....	103
Ottawa, Ill. ....	105
Peru .....	107
Richmond .....	86
Richmond .....	107
Rushville .....	53
Rochester .....	111
Shelbyville .....	85
South Bend .....	99
Valley Mills .....	68
Vincennes—Meeting of State Charities Association.....	26
Zionsville .....	85
West Newton, Sanitary Survey of Schoolhouse.....	67
Wingate, Sanitary Survey of Schoolhouse.....	44
Zionsville, Survey of Schoolhouse.....	85
 <b>CHEMICAL DEPARTMENT, LABORATORY OF HYGIENE, RE-</b>	
<b>PORT OF .....</b>	<b>131</b>
<b>FOOD AND DRUGS, INSPECTION AND CONTROL OF.....</b>	<b>243</b>
Analysis of Food Samples, Summary of.....	238
Cittes Inspected .....	236
Expense of Maintaining Food and Drug Laboratory.....	237
Food Products in Indiana, Percentage of Adulteration.....	239
 <b>Baking Powder .....</b>	 <b>247</b>
Analysis of .....	248-249
<b>Beers, Wines and Summer Drinks.....</b>	<b>327-329</b>
Domestic Beers, Analysis of.....	330-331
Foreign Beers and Ales, Analysis of.....	331
<b>Butter .....</b>	<b>242</b>
Analysis of .....	244-245
 <b>Canned Goods, Vegetables.....</b>	 <b>307</b>
Asparagus, Analysis of.....	311
Baked Beans, Analysis of.....	310-311

	Page
Mushrooms, Analysis of.....	311
Peas, Analysis of.....	309-310
Sweet Corn, Analysis of.....	308-309
Tomatoes, Analysis of.....	310
Carbonated Soft Drinks.....	343
Analysis of .....	344
Cheese .....	245
Chocolate and Cocoas.....	251
Analysis of .....	252-253
Coffee .....	250
Cream .....	242
Cream of Tartar.....	250
Flavoring Extracts, Lemon.....	254
Analysis of .....	255-263
Flavoring Extracts, Miscellaneous.....	269
Banana, Analysis of.....	269
Miscellaneous, Analysis of.....	270
Orange, Analysis of.....	271
Pineapple, Analysis of.....	270
Raspberry, Analysis of.....	271
Strawberry, Analysis of.....	270
Flavoring Extracts, Vanilla.....	263
Analysis of .....	264-269
Ginger Ales .....	336
Analysis of .....	337
Honey .....	271
Analysis of .....	272
Ice Cream .....	246
Analysis of .....	247
Lard and Lard Compounds.....	292
Analysis of .....	293
Malt Extracts .....	332
Analysis of .....	333
Maple Syrup .....	272
Maple Syrup, Analysis of.....	273-278
Maple Sugar, Analysis of.....	279
Meat Products .....	284
Bologna, Analysis of.....	291
Frankfurters, Analysis of.....	290
Fresh Meats, Analysis of.....	289
Hamburger Steak, Analysis of.....	288
Ham Loaf, Analysis of.....	290
Miscellaneous Meats, Analysis of.....	289-291

	Page
Sausage, Analysis of.....	285-288
Veal, Analysis of.....	290
Weiner Sausage, Analysis of.....	291
Meat Products, Canned.....	292
Analysis of .....	292
Milk Products .....	240
Milk, Analysis of by Cities and Towns.....	241
Milk, Condensed .....	245
Analysis of .....	246
Miscellaneous Food Products.....	359
Miscellaneous Fruit Beverages.....	338
Ciders, Analysis of.....	339
Grape Juices, Analysis of.....	341
Lime Juices, Analysis of.....	340
Orange Cider, Analysis of.....	339
Root Beers, Analysis of.....	342
Molasses .....	279
Analysis of .....	280
Molasses, Sorghum .....	281
Sorghum Molasses, Analysis of.....	281-282
Table Syrup, Analysis of.....	283
Olive Oil .....	294
Analysis of .....	294-297
Preserved Fruits, Jellies and Jams.....	297
Canned Fruits, Analysis of.....	306-307
Preserved Fruits, Analysis of.....	299-306
Preserved Fruits (Put up in Tin Package), Analysis of.....	306
Spices .....	312
Allspice, Analysis of.....	317-318
Black Pepper, Analysis of.....	313-316
Cayenne Pepper, Analysis of.....	317
Ginger, Analysis of.....	318-319
Ground Cloves, Analysis of.....	319-322
Ground Mustard, Analysis of.....	316
Miscellaneous Spices, Analysis of.....	322
Teas .....	253
Tomato Catsups .....	322
Analysis of .....	323-327
Vinegars .....	345-346
Cider Vinegar, Analysis of.....	347
Vinegar, Analysis of.....	348-354
Vinegar, Grain .....	357
Analysis of .....	358
Vinegar, Malt .....	355
Analysis of .....	356

	Page
Wines .....	334
Analysis of .....	335
<b>DRUGS</b> .....	350-360
Adulteration of Drugs in Indiana, Percentage of.....	362
Drugs Analyzed, Summary of.....	361
Alcohol .....	363
Analysis of .....	364-365
Aqua Ammonia .....	365
Analysis of .....	366-367
Bay Rum .....	367
Analysis of .....	367
Beeswax .....	376
Beeswax, Analysis of.....	376-378
Beeswax, the Butyro-Refractometer Curve.....	379-381
Black Antimony .....	367
Analysis of .....	368
Glycerine .....	369
Analysis of .....	369-370
Lime Water .....	370
Analysis of .....	371-373
Miscellaneous Drugs .....	390
Boric Acid, Analysis of.....	390
Potassium Chlorate, Analysis of.....	391
Potassium Iodide, Analysis of.....	391
Precipitated Sulphur, Analysis of.....	392
Rochelle Salts, Analysis of.....	391
Salicylic Acid, Analysis of.....	391
Soda Phosphate, Analysis of.....	391
Tartaric Acid, Analysis of.....	392
Zinc Sulfate, Analysis of.....	391
Precipitated Sulphur .....	373
Analysis of .....	374-376
Spirits of Camphor.....	381
Analysis of .....	382-383
Syrup of Iodide of Iron.....	383
Analysis of .....	383-384
Tincture of Arnica.....	384
Analysis of .....	384
Tincture of Iodine.....	385
Analysis of.....	385-387
Tincture of Iron.....	387
Analysis of .....	387-390
<b>INSPECTION OF GROCERY STORES, MEAT MARKETS AND</b> <b>SLAUGHTER HOUSES, BY CITIES.....</b>	<b>392</b>
Alexandria .....	399
Anderson .....	398
Brazil .....	407-409

	Page
Columbus .....	396-397
Danville .....	407
Edinburg .....	396
Elwood .....	399
Fort Wayne .....	402
Franklin .....	396
Goshen .....	402-403
Greencastle .....	407
Hammond .....	404-405
Indianapolis .....	393-396
Jeffersonville .....	406
Kokomo .....	400
Laporte .....	403
Madison .....	406
Marion .....	400
Michigan City .....	403-404
Muncie .....	397-398
New Albany .....	407
Noblesville .....	399
Peru .....	406
Plymouth .....	405
Rochester .....	405
South Bend .....	400-401
Terre Haute .....	409-411
Tipton .....	399
Valparaiso .....	405
Whiting .....	404

#### Slaughter Houses, Inspection of—

Anderson .....	412
Brazill .....	411-412
Greencastle .....	411
Jeffersonville .....	411
Terre Haute .....	412

PUBLIC WATER SUPPLIES, EXAMINATION OF.....	133
Number of Cities and Towns Having Public Water Supplies....	136
Number and Quality of Water Supplies Examined in Indiana....	140
Number of Public and Private Water Supplies.....	141
Condition of Public and Private Water Supplies.....	142
Private Water Supplies.....	143
Private Well Waters, Summary.....	145
Condition of Private Water Supplies in Indiana.....	146
Chemical Analysis of Cistern Waters.....	147
Table of Analysis of Cistern Waters.....	149
Water Analysis, Interpretation of.....	150
Potable Waters; Spring, Deep Well, Dug Well, Cistern, Analysis of .....	152-153

	Page
Water Supply of the State of Indiana. Chemical Analysis of, by	
Cities .....	156
• Angola .....	221
Bedford .....	199
Brazil .....	165
Brownstown .....	188
Cambridge City .....	229
Chesterton .....	214
Clarks Hill .....	224
Columbia City .....	233
Connersville .....	174
Covington .....	174
Crawfordsville .....	206
Elkhart .....	172
Evansville .....	226
Fairmount .....	178
Fort Wayne .....	157
Goodland .....	208
Goshen .....	172
Greencastle .....	217
Greensburg .....	170
Greenwood .....	192
Hagerstown .....	229
Hobart .....	196
Huntington .....	186
Indianapolis .....	201
Jasper .....	170
Jeffersonville .....	163
Lebanon .....	161
Liberty .....	224
Ligonier .....	210
Livonia .....	226
Logansport .....	163
Madison .....	188
Martinsville .....	206
Michigan City .....	199
Middletown .....	186
Mitchell .....	201
Monticello .....	233
Montpelier .....	159
Mooreville .....	208
New Castle .....	184
New Middletown .....	184
Noblesville .....	182
Orleans .....	210
Richmond .....	231
Rochester .....	178
South Bend .....	221
Valparaiso .....	214



	Page
Vincennes .....	192
Warsaw .....	194
Westfield .....	182
Winchester .....	217
Zionsville .....	161
 Water Supply of the State of Indiana by Cities.....	 156
Alamo .....	205
Albany .....	171
Albion .....	209
Alexandria .....	200
Alton .....	166
Amboy .....	204
Anderson .....	200
Andrews .....	187
Angola .....	222
Arcadia .....	181
Argos .....	203
Ashley .....	222
Atlanta .....	181
Attica .....	176
Auburn .....	169
Aurora .....	168
Avilla .....	209
Bainbridge .....	216
Batesville .....	218
Bedford .....	198
Berne .....	156
Birdseye .....	171
Bloomfield .....	180
Bloomington .....	205
Bluffton .....	230
Boonville .....	228
Boston .....	228
Boswell .....	158
Bourbon .....	203
Bowling Green .....	164
Brazil .....	164
Bremen .....	204
Bristol .....	173
Broad Ripple .....	202
Brook .....	207
Brooksbury .....	190
Brookston .....	230
Brookville .....	177
Brownsburg .....	185
Brownstown .....	187
Bunker Hill .....	204
Cambridge City .....	228

	Page
Campbellsburg .....	228
Cannelton .....	212
Carbon .....	164
Carlisle .....	222
Carmel .....	183
Carthage .....	218
Cayuga .....	227
Center Point .....	184
Centerville .....	228
Charlestown .....	162
Chesterton .....	213
Chrisney .....	219
Churubusco .....	232
Cicero .....	183
Clarks Hill .....	223
Clarksville .....	162
Clay City .....	164
Claypool .....	193
Colfax .....	166
Columbia City .....	232
Columbus .....	156
Connersville .....	175
Converse .....	204
Corydon .....	183
Covington .....	176
Crawfordsville .....	205
Crothersville .....	189
Crown Point .....	195
Cynthiana .....	215
Dale .....	219
Dana .....	227
Darlington .....	205
Delphi .....	162
Diamond .....	212
Dublin .....	230
Dunkirk .....	189
Earl Park .....	158
East Chicago .....	195
Eaton .....	171
Edinburg .....	191
Elizabeth .....	183
Elizabethtown .....	158
Elkhart .....	173
Ellettsville .....	205
Elnora .....	176
Elwood .....	200
English .....	166
Etna Green .....	193
Evansville .....	225

	<b>Page</b>
Fairmount .....	179
Farmersburg .....	222
Farmland .....	216
Flora .....	162
Fort Branch .....	179
Fortville .....	183
Fort Wayne .....	158
Fowler .....	158
Francisville .....	215
Frankfort .....	166
Franklin .....	191
Frankton .....	202
French Lick .....	211
Garrett .....	169
Gas City .....	180
Geneva .....	156
Georgetown .....	175
Goodland .....	207
Goshen .....	173
Gosport .....	212
Grand View .....	219
Greencastle .....	216
Greenfield .....	183
Greensburg .....	169
Greentown .....	185
Greenwood .....	191
Hagerstown .....	230
Hamlet .....	222
Hammond .....	197
Hardinsburg .....	228
Hartford City .....	160
Hartsville .....	158
Hazleton .....	179
Hebron .....	213
Hensler .....	215
Hillsboro .....	176
Hope .....	158
Hudson .....	222
Huntingburg .....	171
Huntington .....	187
Hobart .....	197
Indianapolis .....	202
Ingalls .....	202
Jamestown .....	160
Jasper .....	173
Jeffersonville .....	164
Jonesville .....	158
Kendallville .....	211
Kentland .....	207

	Page
Kewanna .....	177
Kirklin .....	166
Knightstown .....	185
Knox .....	222
Laconia .....	183
Ladoga .....	207
Lafayette .....	223
Lagrange .....	195
Lapel .....	202
Laporte .....	197
Laurel .....	177
Lawrenceburg .....	168
Leavenworth .....	167
Lebanon .....	160
Leesburg .....	193
Liberty .....	225
Liberty Center .....	230
Ligonier .....	209
Linden .....	207
Linton .....	181
Livonia .....	228
Logansport .....	162
Loogootee .....	204
Lowell .....	197
Lynn .....	216
Lyons .....	181
Macy .....	204
Madison .....	190
Marengo .....	167
Marion .....	180
Markle .....	187
Martinsville .....	207
Mauckport .....	183
Mentone .....	193
Michigan City .....	198
Michigantown .....	166
Middlebury .....	175
Middletown .....	185
Millford .....	193
Millersburg .....	175
Millhausen .....	169
Milltown .....	167
Milton .....	230
Mishawaka .....	220
Mitchell .....	200
Monon .....	232
Monroeville .....	156
Monterey .....	215
Montgomery .....	167

	<b>Page</b>
Monticello .....	230
Montpelier .....	160
Moores Hill .....	168
Moorestville .....	207
Morocco .....	209
Morristown .....	219
Mount Ayr .....	209
Mount Carmel .....	177
Mount Vernon .....	215
Muncie .....	171
Nappanee .....	175
Nashville .....	162
New Augusta .....	203
New Carlisle .....	220
New Castle .....	185
New Harmony .....	215
New Middletown .....	183
New Pekin .....	228
Newport .....	227
New Ross .....	207
Noblesville .....	183
North Judson .....	222
North Liberty .....	220
North Manchester .....	227
North Salem .....	185
North Vernon .....	180
Oakland City .....	179
Odon .....	168
Oldenburg .....	177
Oolitic .....	200
Orestes .....	202
Orleans .....	211
Ossian .....	230
Otterbein .....	158
Owensville .....	179
Oxford .....	158
Paoli .....	211
Paragon .....	207
Parker .....	216
Patoka .....	179
Pendleton .....	202
Perkinsville .....	202
Peru .....	204
Petersburg .....	213
Piercetown .....	193
Plainfield .....	185
Plymouth .....	204
Poneto .....	230
Portland .....	189

	Page
Poseyville .....	215
Princeton .....	179
Redkey .....	190
Remington .....	189
Rensselaer .....	189
Richmond .....	230
Ridgeville .....	216
Rising Sun .....	211
River Park .....	220
Roachdale .....	216
Roann .....	227
Roanoke .....	187
Rochester .....	177
Rockport .....	219
Rockville .....	212
Rosedale .....	212
Rossville .....	166
Rushville .....	218
Russellville .....	216
Saint Joe .....	169
Saint Meinrad .....	219
Salem .....	228
Scottsburg .....	218
Sellersburg .....	164
Selma .....	171
Seymour .....	187
Shelburn .....	222
Shelbyville .....	219
Sheridan .....	183
Shoals .....	204
Silver Lake .....	193
South Bend .....	220
Southport .....	203
South Whitley .....	232
Spencer .....	212
Staunton .....	166
Sullivan .....	223
Summitville .....	202
Tell City .....	212
Terre Haute .....	227
Thorntown .....	160
Tipton .....	225
Tremont .....	222
Troy .....	213
Union City .....	216
Upland .....	180
Valparaiso .....	213
Vernon .....	190
Versailles .....	218

	Page
Vevay .....	223
Village .....	220
Vincennes .....	191
Wabash .....	227
Walkerton .....	220
Wallace .....	176
Warsaw .....	193
Washington .....	168
Waterloo .....	169
Waveland .....	207
Waynetown .....	207
West Baden .....	211
Westfield .....	183
West Lafayette .....	223
West Lebanon .....	228
Westport .....	169
Westville .....	198
Whitewater .....	230
Whiting .....	197
Winchester .....	216
Windfall .....	225
Wingat: .....	207
Winslow .....	213
Wolcott .....	232
Wolcottville .....	195
Worthington .....	181
Zionsville .....	160

Page	
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100



LANE MEDICAL LIBRARY

—  
This book should be returned on or before  
the date last stamped below.

--	--	--



